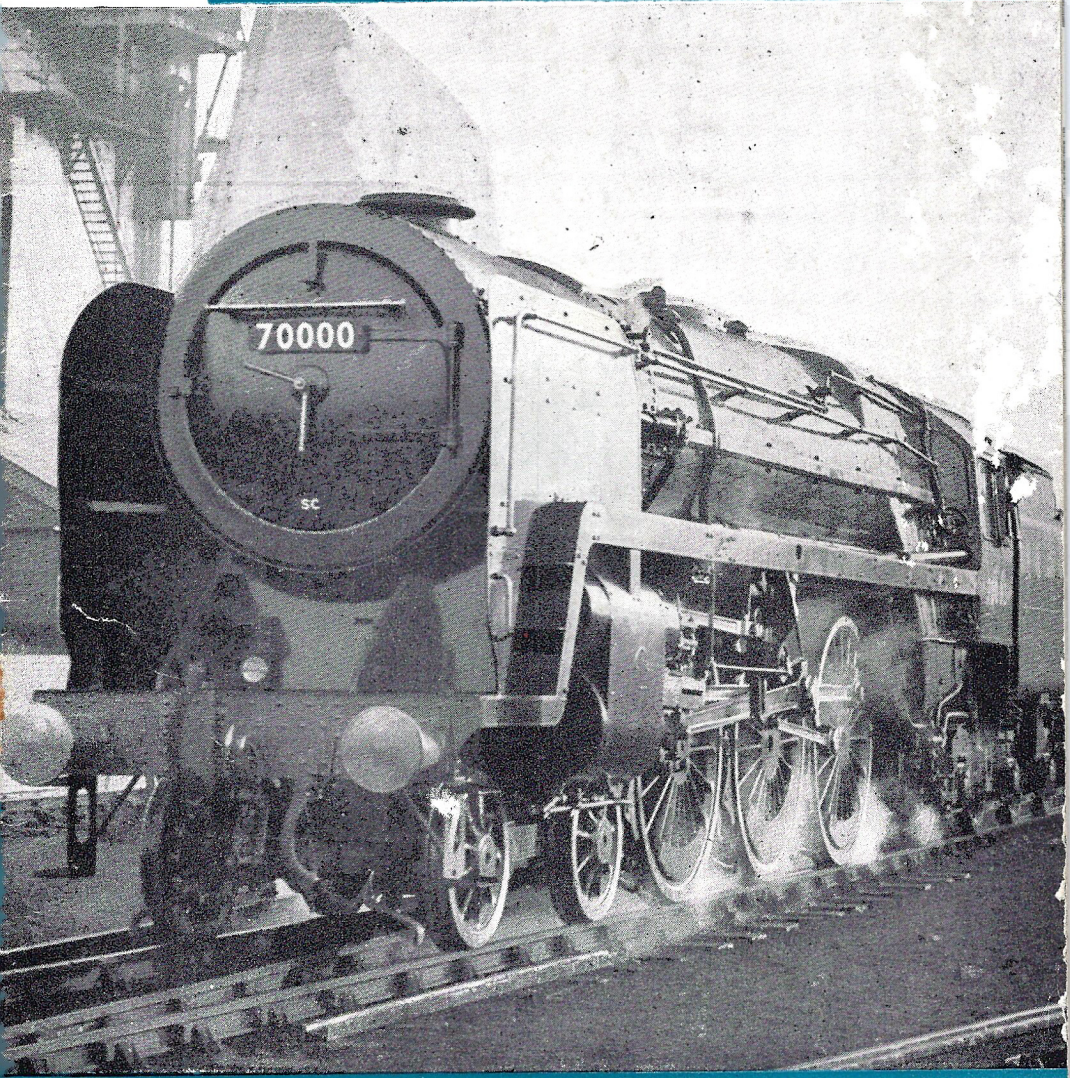
TRAINS ILLUSTRATED

MARCH, 1951



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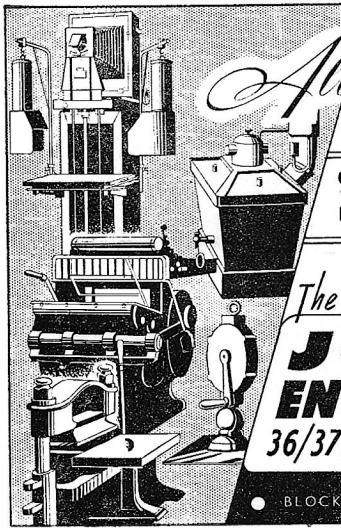

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TRAINS ILLUSTRATED

Vol. IV, No. III MARCH, 1951

Editor :
G. FREEMAN ALLEN
Published by
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Below : ON GRAYRIGG BANK—"Royal Scot" 4-6-0 No. 46142 *The York & Lancaster Regiment* climbs away from Oxenholme with the 10.40 a.m. Euston—Carlisle express (14/6/50). [*E. D. Bruton*

INTRODUCING No. 70000

• FIRST STANDARD DESIGN OF BRITISH RAILWAYS •

AT Marylebone Station in London, on January 30th, there was introduced to the public the first locomotive built to a British Railways standard design. It is the long-awaited 6 ft. 2 in. Pacific. No. 70000, and the name *Britannia* was conferred by the Minister of Transport at the naming ceremony. No. 70000 is the first two-cylinder Pacific to run in Great Britain.

In appearance the new machine, as might be expected from the pre-nationalisation affinities of its principal designers, favours the works at Crewe at which it was built. Externally the engine looks like a rather squat version of an L.M.R. "Duchess" Pacific, massive but certainly not beautiful. The running-plate has been raised to an immense height off the ground, sufficient to clear, by a considerable margin, the whole depth of the coupled wheels. It has a deep valance, which runs as a straight line from above the cylinders

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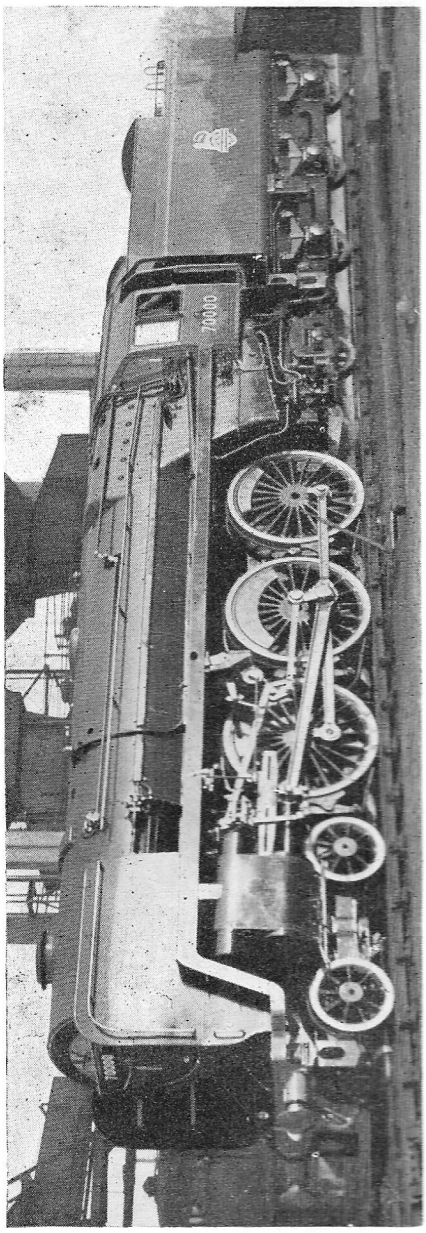
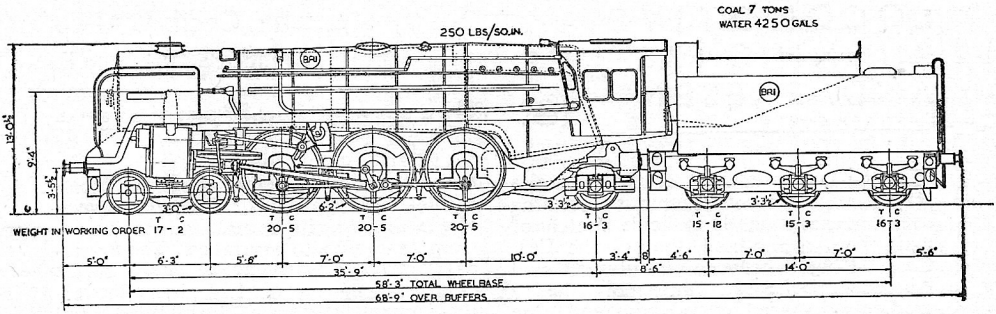


BEFORE NAMING — Class "7MT" 4-6-2 No. 70000 at Neasden on 28/1/51. One of this class, together with S.R. diesel electric No. 10201 and one of the 0-6-0 electric locomotives now under construction for the Sheffield—Manchester electrification, will form the B.R. motive power exhibits at the Festival of Britain.
[C. C. B. Herbert

TRAINS of Thought

FROM THE EDITORIAL DESK

THE RESPONSE to our December appeal for news and views from all quarters for publication has been most gratifying — save to our hard-pressed secretarial staff. But may we take this opportunity to urge a few correspondents to make sure that their facts are based on personal observation or experience, not hearsay. One or two cases have occurred in which we have published information provided by correspondents which has later proved of uncertain foundation; we do not claim omniscience, nor have we always the time or staff available to check and double-check every item we publish, so that, while discretion is often exercised, we must occasionally rely on the writer alone. At the same time, may we ask photographers to be equally careful with the captions to their pictures and to include the date of exposure and their name and address on the reverse of each print submitted. Let us add that we are always happy to consider new photographs for possible publication; they should be printed on glossy paper and not less than postcard size.



into the middle of the cab side sheets; the cab appears suspended precariously in mid-air, its lower edge at a level half-way down from the running-plate to the level of the underside of the tender body—a rather ugly arrangement.

The front end, however, is an improvement on recent designs, for instead of the rather hideous affectation now current of a running-plate completely cut off from the platform above the buffer-beam, in No. 70000 the two are connected by bringing the running-plate sharply down, ahead of the cylinders, to the buffer-beam level. The connection between regulator handle and regulator is carried along the outside of the boiler casing in rather Heath Robinson fashion, with a reversing crank midway, and passes into the smokebox through a stuffing-box.

The tender has been designed with coal space narrower than the tender body, in order to improve the look-out when the engine is running in reverse, but this has been achieved at the expense of looks, and, in addition, at the expense of water capacity, which is cut from the normal 5,000 gallons to 4,250 gallons.

One interesting breakaway from Crewe practice is the adoption of the L.N.E.R. three-bar slidebar with underhung crosshead. Among modern fittings from which No. 70000 should benefit considerably are roller bearings to all axles, a "Melesco" centrifugal steam-dryer in the dome (designed to separate any water from the steam before the latter enters the steam-pipe), a 40-element superheater, a multi-valve regulator (which should give the driver ample safeguard against slipping when starting away), a self-cleaning smoke box, and a rocking grate (which can be agitated from the cab while the engine is in motion, to prevent the formation of clinker, and completely when dropping the fire over an ashpit). It is a surprise to find a single blastpipe and chimney in place of the multiple-jet exhaust that seemed to have become standard with the larger British engines. One pleasant reversion to L.N.E.R. practice is the provision of a three-tone chime whistle, to sound a musical chord rather than a shrill shriek or a gruff hoot; this is oddly placed, high up on the offside of the boiler, almost abreast of the dome.

The first fifteen of these engines, Nos. 70000 to 70014 inclusive, are to go to the Great Eastern section of the Eastern Region—the first Pacifics ever to begin regular running in East Anglia. What an amazing development they represent from the Holden "1500" class engines first introduced in 1912, so rigidly restricted in their proportions for clearance and weight reasons, and yet so extraordinarily capable in their work! The comparison is the more striking in that both types have cylinders of precisely the same dimensions—20 in. diameter by 28 in. stroke. But here any similarity between No. 70000 and a "B12" 4-6-0 ceases.

The 5 ft. 1 in. diameter boiler of No. 1500 now becomes a coned boiler with a maximum diameter of 6 ft. 5 in.; instead of No. 1500's combined heating surface of 1,919 sq. ft., No. 70000 has 3,192 sq. ft., and 26.5 sq. ft. of firegrate gives place to 42 sq. ft.; above all, working pressure advances from 180 to

[*Concluded on page 94*

PRINCIPAL DIMENSIONS CLASS "7MT" 4-6-2 No. 70000

Cylinders (2)	20 x 28 in.	Combined heating surfaces	3,192 sq. ft.	Total engine weight	94·0 tons
Driving wheels, diam.	6ft. 2in.	Firegrate area	42 ,,	Tender water capacity	4,250 gal.
Heating surface, tubes and flues	2,264 sq. ft.	Working pressure, per sq. in.	250 lb.	,, coal ,,	7·0 tons
Heating surface, firebox	210 ,,	Tractive effort (at 85% w.p.)	32,150 ,,	Tender weight, loaded	47·4 ,,
Heating surface, total	2,474 ,,	Adhesion weight	61·5 tons	Total weight, engine and tender	141·4 ,,
Superheating surface	718 ,,				

LOCOMOTIVE RUNNING PAST AND PRESENT

by Cecil J. Allen
M.Inst.T., A.I.Loco.E.

10. Plymouth—Penzance

IN the last instalment of these articles we reviewed the locomotive running over an exceptionally difficult stretch of main line in Scotland, that of the East Coast Route between Edinburgh and Aberdeen, with its extremely heavy gradients, sharp curvature, and the excessive demands on locomotive power made by the fact that almost all the principal stations and speed restrictions over curves or pitfalls are at the foot of steep inclines. The Western Region main line from Newton Abbot to Plymouth and Penzance is in much the same category; though not all the stops are so badly placed as those of the Scottish main line mentioned, the gradients of South Devon and Cornwall on the whole are very far steeper.

In general, it may be remarked that these are the usual characteristics of any line which runs fairly close to the coastline of a mountainous or hilly part of the country. The old South Devon main line of the G.W.R., having come down through Exeter running almost due south, and then having actually turned south-east for a short distance along the estuary of the Exe, maintains a level course until it turns due west up the Teign estuary to Newton Abbot, in order to cut across the base of the Start Point peninsula towards Plymouth. This procedure made it necessary for the builders to skirt the southern slopes of Dartmoor, intersected by the deep valleys that drain down from the Devon highlands to the sea, particularly the Dart valley at Totnes. So, after Newton, there comes the tremendous climb to Dainton summit, and the descent to sea level again at Totnes, at the head of the Dart estuary, where the river is still tidal; following this there is the exacting climb of Rattery bank, the gentler continuation to Wrangaton summit and the equally gentle descent to Hemerdon, and finally the precipitous drop down Hemerdon bank into Plympton, in order to cross the Plym estuary.

Throughout Cornwall the story is much the same; the maximum inclinations are not so steep, but many of the banks are very long. Some thirty viaducts, many of them of considerable size and culminating in Brunel's great Royal Albert Bridge from Devon into Cornwall over the Tamar, carry the line over deep ravines, and it reaches its lowest points near sea level at Lostwithiel, Par, Probus, Truro, between Hayle and St. Erth, and, in conclusion, from Marazion to Penzance. The principal "peaks," on the other hand, are at Doublebois (west of Liskeard), Treverrin tunnel (between Lostwithiel and Par), Burngullow (west of St. Austell), and the Redruth "tableland," between Scorrier and Camborne. The worst continuous inclines are Bodmin Road bank, eastbound (7 miles mostly 1 in 70 to 1 in 90), the westbound starts from Lostwithiel and Par (2 miles at 1 in 64-72 to Treverrin tunnel in the former case and 5 miles largely at 1 in 60-64 from Par Harbour up past St. Austell in the latter); then the westbound start from Truro, first at 1 in 60, later, from Penwithers Junction, for 3½ miles at 1 in 80; and, to finish with, the long climb of 9 miles eastbound from St. Erth past Gwinear Road and Camborne to Carn Brea, broken in parts by easier stretches but including a number of strips at about 1 in 60 inclination.

In view of the importance of this line, it has always surprised me that the Great Western never made any attempt to design a special type of locomotive to operate over it. The obvious place to change engines is Newton Abbot rather than Plymouth. One wonders to what extent G.W.R. express passenger locomotive design might have been affected had it not been necessary to ensure that locomotives capable of continuous high speed over relatively easy gradients must also be capable of developing very high tractive efforts in negotiating the banks west of Newton Abbot. Certainly these two widely differing ranges of power demand were combined with remarkable success in the "Castle" and "King" 4-6-0s, though it could hardly be contended that either is an ideal type for use between Newton Abbot, Plymouth and Penzance. In any event a "King" is not permitted, for weight reasons, to cross the Saltash Bridge, but the "Castles" and other 6 ft. 8 in. 4-6-0s have done a good deal of service in Cornwall.

In my judgment, while steam still held the field exclusively, something like a "Garratt" articulated type would have been most suitable for the Newton Abbot - Plymouth - Penzance line. A 2-6-6-2, for example, with about 6 ft.

driving wheels and coupled wheelbase brought down to, say, 13 ft. as compared with the 14 ft. 9 in. of a "Castle" or the 16 ft. 3 in. of a "King," should have been easier on the sharply curved track than either of the two types just mentioned, in addition to having the high tractive effort needed for the exceptionally severe climbing.

Now that other competitors have come on the scene, in the form of diesel-electric and gas turbine-electric locomotives at present under test, a form of motive power is becoming available that would be simply ideal for such a route, with its exceedingly high starting and low speed tractive effort, its ample adhesion, and the flexibility of its double bogie suspension on curves. A locomotive of this description would make light of a couple of round trips daily from Newton Abbot to Penzance and back, and its high accelerative powers would make possible substantial accelerations without any excessive downhill speeds. So many trains now stop regularly at Newton Abbot for assistance that little loss of time would be entailed by stopping to exchange there the steam locomotive used from Paddington for the diesel or gas turbine; and on trains not normally stopping the gain of time by acceleration in running should more than balance any loss by the stops.

In recent years, however, a locomotive class more suitable than any previous type for the South Devon and Cornwall main line has come into being with the Hawksworth "County" 4-6-0s. with their 6 ft. 3 in. driving wheels, 280 lb. pressure, and 32,580 lb. tractive effort, and the most interesting run I have ever enjoyed in Cornwall was one I made in the autumn of 1947 on the footplate, most appropriately, of No. 1006 *County of Cornwall*, with the London-bound "Cornish Riviera Express." The train was made up to a moderate total of nine vehicles, weighing 293 tons tare and 315 tons gross. In charge of the engine were Driver Hocking and Fireman Rogers of Laira shed, and the fourth footplate passenger was Inspector Pullen, of Swindon, my guide, philosopher and friend during a three-day tour of Western Region footplates that I was making during the week in question.

I was particularly glad of the opportunity of making some runs with the engine-crews of "Counties." At that date the engines had not been long out of the shops, and there were very varying accounts as to their capabilities. The facts were that their behaviour on the road differed considerably from that of other G.W.R. express passenger types, and demanded different methods of handling; in particular, I was to see a complete break-away from the G.W.R. full regulator and ultra-short cut-off tradition, largely arising from the high boiler pressure carried by the engine. But this crew had the full measure of their mount, and were clearly at home and quite happy with her. It was a lovely morning as we made our way out of Penzance across the causeway towards Marazion, with St. Michael's Mount standing up proudly across the width of Mounts Bay.

As is customary with the perfectly controllable Western Region regulator, we made clean starts everywhere, without a vestige of slip. The actual start is generally on the full 75 per cent. cut-off, with the first port of the regulator only; in less than 100 yards from Penzance platform we were down to 45 per cent., and then by stages to 23 per cent. at the end of the first level ¼-mile; next, to get up the sharp rise to St. Erth, the main port of the regulator was partly opened. On this sharply-timed first stage we had dropped just over a minute—the 5.6 miles took 10 min. 12 sec.—but the loss was easily regained later on. The next short stage, to Gwinear Road, is a hard grind, steepening finally to a mile at 1 in 61; we had quickly attained 40 m.p.h. in the preliminary dip, but then, as we got on to the bank, Driver Hocking opened out finally to 33 per cent. cut-off, and had the main regulator port well open. Even so, speed fell to 25½ m.p.h.; but we kept time, running the 5.1 miles from St. Erth up to Gwinear Road in 9 min. 51 sec., start to stop.

The next stage, past Camborne, is similar—a slight dip from the start, on which we reached 40 m.p.h., and then 1 in 61 up, with 25 m.p.h. minimum speed, on 35 per cent. cut-off this time. All the way up these lengthy and steep grades, Fireman Rogers was keeping the needle of the pressure gauge steadily at the 280 lb. mark, and the engine was responding perfectly to every demand. Across the undulating stretch to Chacewater 23 per cent. cut-off and the first port of the regulator served us nicely; the prescribed service slacks were made at Redruth and Chacewater, to 35 and 45 m.p.h. respectively, and then we rolled quietly down to Penwithers Junction, just touching 61 m.p.h., and stopped at Truro, 15.2 miles from Gwinear Road, in 22 min. 34 sec., a gain of 1½ min. on schedule which corrected the previous loss.

From Truro there are three stages in the climb to Burngullow summit.

Immediately across Truro viaduct comes a one-mile climb at 1 in 78 to Buckshead tunnel; then a drop to Probus and a second climb, ¾-mile at 1 in 88 and 1¾ miles at 1 in 67, to Grampound Road; from there a shorter drop to a couple of viaducts and a final 2¼ miles up, averaging 1 in 75, to Burngullow. Down the winding descents, the driver's practice was to advance cut-off to 45 per cent. and to let a wisp of steam through the regulator, which cushions in the cylinders and keeps the speed down without a lot of irritating brake application; up the three banks it was 30 per cent. cut-off on the first, with a drop in speed from 29 to 24½ m.p.h., 32 per cent. on the second, with speed falling from 57 to 27½ m.p.h., and 30 per cent. on the third, where the range of speed was 53 to 36 m.p.h. So we breasted Burngullow summit, 12.1 miles, in the good time of 18 min. 39 sec. from Truro, and came to a stand at Par, 19.0 miles, in 27 min. 13 sec., a further gain of 1¾ minutes.

From Par there is, perhaps, the nastiest eastbound start of all. Almost from the platform begins 1 in 94 up, steepening later to 1 in 62 to Treverrin tunnel, where we were doing no more than 22½ m.p.h.; and any impetus we might have gained down the opposite side to Lostwithiel was lost by a severe permanent way slowing right through that station. On the 2 miles of gradual rise beyond, on 23 per cent. cut-off, speed mounted to 44 m.p.h.; the driver did not work his engine any harder at this point, for it was necessary to husband the steam in readiness for Bodmin Road bank, which now loomed straight ahead of us. Pressure had dropped to 230 lb. at the end of the previous big climb, to Burngullow, but the short wait at Par had permitted a recovery to 250 lb., and the needle was steady at 260 lb. as *County of Cornwall* nosed her way up the long succession of curves to Doublebois. From the footplate, indeed, almost throughout from Penzance to Newton Abbot there is scarcely half-a-mile of line that is straight; one is unceasingly on the lookout for what is going to appear "round the corner."

Cut-off was lengthened progressively as we forged our way up the bank, until eventually 35 per cent. was reached; the lowest speed on 1 in 70 was 24½ m.p.h., but directly we struck the final 1 in 90 speed recovered to 28 m.p.h. So the 13.6 miles from Par up to Doublebois took 26 min. 54 sec., or 24½ minutes net, and we passed Liskeard, 16.9 miles, in 31 min. 18 sec., or 28¾ minutes net. Now we had but to roll down to the shores of the Tamar, and to reduce speed to no more than a crawl across Brunel's great bridge at Saltash. Beyond St. Budeaux a succession of "distants" was against us, but we were not stopped, and finally ground to a stop at North Road, 34.7 miles from Par, in 58 minutes exactly. Our net time of about 54½ minutes was well inside the 57-minute schedule, and completed a net gain of all but 5 minutes from Penzance to the engine's credit.

In pre-war days this train had a harder timing, with a minute less from St. Erth to Gwinear Road, and from Truro to Par; and 2 minutes less each from Gwinear Road to Truro and Par to Plymouth. The "Castles" could keep time with similar loads, but were allowed to travel downhill considerably faster than on our trip. The best "Castle" run I can trace from Penzance to St. Erth was one made by No. 4083 *Abbotsbury Castle,* with 280 tons, in 8 min. 58 sec. for the 5.6 miles, though "Hall" 4-6-0 No. 4964 *Rodwell Hall* beat this with 8 min. 35 sec., and a similar train. From St. Erth No. 4088 *Dartmouth Castle,* with 285 tons, climbed to Gwinear Road in 8 min. 59 sec., while No. 4094 *Dynevor Castle* took 360 tons up—a ten-coach load—in 9 min. 42 sec., a very smart effort.

Both *Abbotsbury Castle* and *Rodwell Hall* just kept the 22-minute schedule from Gwinear Road to Truro, with practically the same load (320 tons) as that of *County of Cornwall;* the "Hall" did particularly well with a time of exactly 10 minutes from Gwinear Road to Redruth, as compared with our 10 min. 53 sec. From Truro up to Burngullow there was some very even running: *Abbotsbury Castle,* with 325 tons, took 18 min. 5 sec., and *Rodwell Hall,* with one coach more (355 tons), 18 min. 10 sec.; the former then had a signal check, but the latter stopped at Par in 27 min. 5 sec. from Truro.

But the big climb from Lostwithiel up to Doublebois winded the "Hall," and on the 1 in 70 the speed of this train got down to a crawl of 17½ m.p.h., so that it took 27 min. 10 sec. to creep over the top at Doublebois. *Abbotsbury Castle,* on the other hand, was up to the top in 23 min. 28 sec., with 325 tons, and with 365 tons *Dartmouth Castle* managed it in 24 min. 25 sec., while *Kingswear Castle,* on another run with 365 tons, took 8 seconds more. The last of these runs later became the fastest I have known in Cornwall with a train of such weight; *Kingswear Castle* hurried down from Liskeard to St. Germans at an unusual average of a mile-a-minute, and went so much faster

[*Concluded on page 85*

IMPROVEMENT CLASS

• Good Steamers •

by W. A. TUPLIN, D.Sc.

FEW things about a locomotive endear her so much to her crew as being "a good steamer"—that is, an engine whose boiler pressure can be kept near the "blowing off" point when working hard, with average coal and without very special attention to firing and feed regulation. A good steamer gives driver and fireman more confidence when an extra effort is required, as her boiler pressure is unlikely to drop quickly; if it does, it can be restored to the full value without much trouble. In a bad steamer, on the other hand, it may be impossible for even the most expert fireman to maintain full pressure when doing ordinary work.

Now supposing that an engine is not steaming properly, what sort of change may be expected to put matters right? The obvious answer is to make the fire hotter, so that steam is produced more rapidly than it is being used, whereupon the boiler pressure will rise, although it will not continue to do so indefinitely. As boiler pressure goes up, so does the temperature of its water content; and therefore heat from the fire passes less easily into it, with the result that the rate of evaporation is slightly reduced and a pressure is reached at which the rate of evaporation of water is equal to the rate of consumption of steam.

To make the fire hotter, more air must be drawn through it by increasing the draught-inducing effect of the exhaust steam that passes from the blast pipe in the smokebox to the chimney. Every driver knows how that may be done. You simply obstruct the flow of steam from the blast pipe by fixing across its mouth a steel bar or two steel bars in the form of a cross, so that the steam has to move faster to get through the smaller opening in the same time.

But you cannot get something for nothing: and that is why drivers' use of "jimmies" or "snickles" (to use two of the men's names for blast-pipe obstructors) is officially forbidden. They increase the speed of the steam, so that it draws more air through the fire as is desired, but they waste power, as they increase the blast-pipe steam pressure, which is "back pressure" on the pistons. There you have the crux of the matter. Any engine can be made to steam well by restricting the blast nozzle, but every engine needs the largest possible blast nozzle to assist coal economy and free running.

It is a quite common practice with an engine of new design to try several different sizes of blast nozzle in order to find which one gives the best compromise between free steaming and free running. Nozzle diameter is only one factor in this matter of draught production, but it happens to be the one that can most easily be altered. Others are the diameter of the chimney; the distance by which it penetrates downwards (as the "petticoat") into the smokebox; the height of the lower edge of the petticoat above the blast nozzle; the height of the blast nozzle above the floor of the smokebox and its distance from the tube plate; the length, diameter and number of the tubes; the grate area; the depth of fire; the clearance between the firebars and the ashes; and the access of air past the dampers. Quite clearly, however, it is the steam jet itself that is the most important factor and its usual form, that of a cone emerging from a single circular hole about 5 inches in diameter, is certainly not the one that gets the best effect from the available steam. Only the outer surface of the jet can exert any drag on the smokebox gases; the steam in the core of the jet has little chance to help. A "jimmy," besides speeding up the steam, divides the jet so that more area is exposed to draw the gases upwards.

It is found that the effect of the steam jet is quite remarkably affected if it does not flow centrally up the chimney. A slight error in setting the blast-pipe when the engine is built, or an uneven deposit of carbonised oil inside the blast pipe after she has been running for some time, may make all the difference between a good steamer and a poor one. An ill-fitting smokebox door or a leaky joint between smokebox plates and adjacent parts of the engine reduces the amount of air that can be drawn through the fire and may therefore spoil the steaming. So in the smokebox, a hell of heat, soot and grit, some things must be just right if the engine is to be a good one.

Further back along the engine, draught may be obstructed by cinders or thick coats of soot inside the tube, by an excessively deep fire, or by too big a collection of ash in the ashpan. Soot on the inner surfaces of the tubes resists the passage of heat to the metal, and scale on the outer surfaces of the tubes restricts the flow of heat to the

water. By the build-up of soot on one side and scale on the other, the engine is made into a less satisfactory steamer every hour it is at work. These reflections make clear the need for frequent tube-cleaning, boiler washing-out and emptying of smokebox and ashpan if an engine is to steam as freely as possible.

Deposition of soot in the tubes occurs only when the fire is allowed to produce smoke. Many engines smoke far more than necessary and if all firemen were as careful as the best in avoiding thick fires and smoke, there would be fewer bad steamers than there are at present.

Although we have implied so far that a bad steamer is an undesirable thing, is it really tragic? If an engine that blows off at 250 lb. per sq. in. is found to be capable of maintaining only 200 lb. per sq. in. in the boiler, is it necessary to ask for a replacement? In many cases, no. For example, Southern Region " Merchant Navy " Pacifics, nominally pressed to 280 lb. per sq. in., can do all that is required of them between Waterloo and Salisbury with partly open regulator and steam-chest pressure lower than 200 lb. per sq. in. Such an engine, steaming so poorly that only (say) 220 lb. per sq. in. could be maintained in the boiler would still be able to do her work.

Where it is common practice to work with full open regulator and early cut-off, a driver may fail to realise what he must do to cope with a badly steaming engine. Suppose, for example, it is usual on a certain run to work at 20 per cent. cut-off with 240 lb. pressure in the steam-chests. One day a driver finds himself on an engine in which the boiler pressure cannot be kept above 200 lb. per sq. in. when worked in the ordinary way. Quite clearly she will not keep time because, at the same cut-off, less power will be produced at the lower pressure. It is perhaps natural to think that if she can keep up only 200 lb. at 20 per cent. cut-off she will surely be run out of breath by using a later cut-off and, therefore, that nothing can be done but to resign oneself to loss of time. Engines have, in fact, been taken off trains on the basis of such an argument, but it is quite false.

To make the engine produce the effort required for timekeeping with the low pressure, a later cut-off, say 30 per cent., must be used. This obviously takes more steam from the boiler, but it also turns out more steam through the blast-pipe, so that the draught is greatly intensified. More steam is required, but more is thereby produced, so that pressure is maintained. The cylinder efficiency is lower than for normal working and so coal consumption is increased, but she does keep time.

Where a gradient is so steep as to demand a late cut-off, even with full boiler pressure, it may be impossible to keep going at all if pressure is badly down. For example, a Western Region " King " with full boiler pressure can develop a maximum effective pull of rather less than 18 tons and is (or was) allowed to take a train of 360 tons from Newton Abbot to Plymouth. On the short strip of 1 in 36 on Dainton bank, the weight of engine, tender and train requires a pull of 13.8 tons to keep it going, quite apart from frictional resistances which may require another ton or so, making a total of perhaps 15 tons. This is the most that the engine could produce with pressure down to 210 lb. per sq. in. and so, even with full open regulator and in full forward gear, she would probably " stall." Here is a case, therefore, where something like full boiler pressure is essential, and no driver of a fully-loaded " King " would be justified in leaving Newton Abbot with anything much lower, even though the engine were a good steamer.

In designing a locomotive a compromise must be struck between the possibility of high efficiency on the one hand (if full boiler pressure can be maintained), and a somewhat lower efficiency on the other hand, in conjunction with more reliable steaming. The highest cylinder efficiency demands low blast pipe pressure, which is not conducive to strong draught. The highest boiler efficiency demands a large tube heating surface, which means high resistance to draught. An engine with such small cylinders in relation to the boiler that it must do much of its work at late cut-off, with high blast-pressure that provides plenty of draught, is likely to be a good steamer, although not particularly economical of coal. An engine with a short boiler barrel and plenty of cross sectional area in its tubes has a low draught resistance and is likely to be a good steamer on that account. This engine also is unlikely to show the highest efficiency, because the boiler has insufficient heating surface to extract as much heat from the products of combustion as is possible.

Despite a slightly inferior efficiency, a good steamer is, however, usually a valuable haulage machine because the crew's confidence in her enables them to get the utmost power from her. Such action is most valuable in bringing a late-running main-line train back to schedule; that improves the efficiency of the whole system, even though it uses more coal in that particular engine.

THE "Staffy"

IMPRESSIONS OF THE NORTH STAFFORDSHIRE RAILWAY AND ITS LOCOMOTIVES

by H. C. Casserley

ONE of the smaller railways which was absorbed into the L.M.S. system at the grouping, but nevertheless one of considerable importance, was the North Stafford, a busy and enterprising little line centred on the Potteries industrial town of Stoke-on-Trent. One of the three original companies amalgamated to form the North Stafford in 1846, in fact, was known as the Potteries Railway, the other two being the Churnet Valley and the Harecastle and Sandbach. Various other lines were absorbed in the 1850's and 1860's and one or two more at a later date, with the result that by 1923 the N.S.R. had acquired a network of lines radiating from Stoke to all points of the compass. In the eastward direction it reached Uttoxeter, Burton-on-Trent, and Ashbourne; to the south it joined up with the L.N.W.R. at Colwich and Norton Bridge; westwards it made connection with the G.W.R. at Market Drayton; whilst to the north and north-west it reached Crewe, Congleton and Macclesfield, from which point it owned jointly with the G.C.R. a further branch to Marple. It also possessed extensive running powers over the Midland to Derby, the G.N.R. to Nottingham, and more particularly over various sections of the L.N.W.R., extending in the latter case as far as Manchester, the North Wales Coast Line, Stafford, Wolverhampton, Birmingham and Rugby. It was always particularly closely associated with the old North Western, and at one time certain of that Company's through trains between Manchester and London, *via* Stoke-on-Trent, were worked into and out of Manchester by North Stafford engines. The N.S.R. operated its own trains into Derby (Midland), where North Stafford engines could be seen regularly, whilst in the summer season they sometimes worked over the L.N.W.R. North Wales line as far as Llandudno.

Although the most important parts of its system ran through the industrial areas of the Potteries, one or two of its lines penetrated into pleasant rural areas, notably the Ashbourne branch, which extended to the neighbourhood of the lovely valley of Dovedale in Derbyshire, a well known beauty spot. Mention should also be made of the Leek and Manifold Valley Light Railway which, although a separate concern, was always worked by the N.S.R. This was a 2 ft. 6 in. gauge line extending from the terminus of the N.S.R. standard gauge branch at Waterhouses up the beautiful and lonely Manifold Valley for a distance of 8 miles. It was one of the most enchanting of all Britain's light railways, but unfortunately its sparse traffic resulted in its closure in 1934.

The system boasted no engineering features of outstanding interest, but there were a good many tunnels, 13 in all, in its 212 route miles solely or jointly owned. The summit of the line was near Ipstones, on the now closed Waterhouses branch, where a height of nearly 1,000 feet above sea level was attained.

At the time of its amalgamation, the N.S.R. possessed nearly 200 engines. As this total included a number of older engines on the duplicate list, that is, ones that had been replaced by more modern engines bearing the same numbers but which continued to run under their old identity with the addition of an 'A' after their numbers, the capital stock of the Company consisted of engines bearing numbers which ran continuously from 1 to 174. However, engines of individual classes were scattered more or less indiscriminately throughout the series, for it was the custom, as on many other lines in pre-grouping days, to allot to a new engine any number that happened to be vacant through scrapping or transfer to the duplicate list. On absorption by the L.M.S.R., North Stafford engines were given numbers in the Midland series, in conformity with the systematic plan of numbering which had been used for many years by that Company and which was adopted by the L.M.S. as a whole.

As the traffic of the line was largely of a local character with a considerable number of freight trains, it is not surprising that the majority of the locomotives consisted of tank classes and the inevitable 0-6-0 tender engines, without which no railway of any size (with the solitary exception of the old Great North of Scotland) was ever complete.

The only N.S.R. locomotives which could be described as main line engines were five 4-4-0s and seven 4-4-2 tanks; these were usually to be found on the

PRE- AND POST-GROUPING NUMBERS OF N.S.R. LOCOMOTIVES DESCRIBED IN THIS ARTICLE

Wheel Arrangement	N.S.R. Nos.	L.M.S.R. Nos.
4-4-0	86/7, 170/1, 38	5410-4*
4-4-2T	8, 45/6, 55, 13/4, 39	2180-6
0-6-4T	30/1, 53, 70, 173/4, 4, 5	2048-55
0-4-4T	9, 11/2, 41/2, 15/7/9, 54	1431-9
2-4-2T	52, 35, 40, 21/4, 61	1454-9
2-4-0T	17/8, 22/7/9/3, 48, 2, 1, 10 (all 'a'), 71, 7	1440-51

*Nos. 595-9 at first

through Crewe-Derby trains or at Manchester, while the 4-4-0s were also responsible for the through summer workings to Llandudno. The first four of these 4-4-0s were built in 1910 at the Company's own works at Stoke-on-Trent (it should be mentioned that the N.S.R. was unusual amongst smaller Companies in building the majority of its locomotives in its own workshops). A fifth and slightly larger version, No. 38, appeared in 1912. These five engines were at first given the numbers 595-9 (in the above order) in the L.M.S.R. list, but when the latter numbers were required in 1928 for new Class "2" standard 4-4-0s, the N.S.R. engines were renumbered 5410-4, following on the "George the Fifth" 4-4-0s in the L.N.W.R. series. Four of them were scrapped in the same year or in 1929, but No. 5413 lasted until the early 1930's.

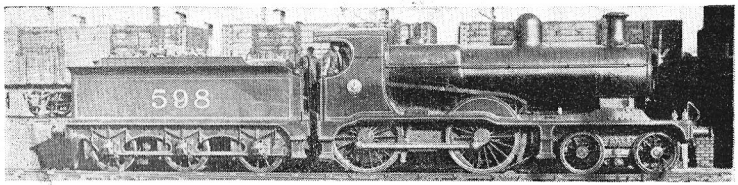
The seven 4-4-2 tanks became in that order L.M.S. Nos. 2180-6, to follow on the Tilbury tanks of the same wheel arrangement. (To allow for this the L.T. & S. 0-6-2 tanks Nos. 2180-93 became 2220-33, but reverted to their former numbers after the North Staffords were scrapped). These locomotives were turned out from Stoke during 1911 and 1912, and were broken up by the L.M.S.R. between 1933 and 1935. There was also a series of fine 0-6-4 tanks constructed during the latter days of the Company's existence; they were of two classes, with 5 ft. (1914-5) and 5 ft. 6 in. (1916-9) driving wheels respectively, and the last-named might perhaps also be described as main line engines, as they were often used on the heavier and more important passenger turns. All were withdrawn between 1934 and 1937.

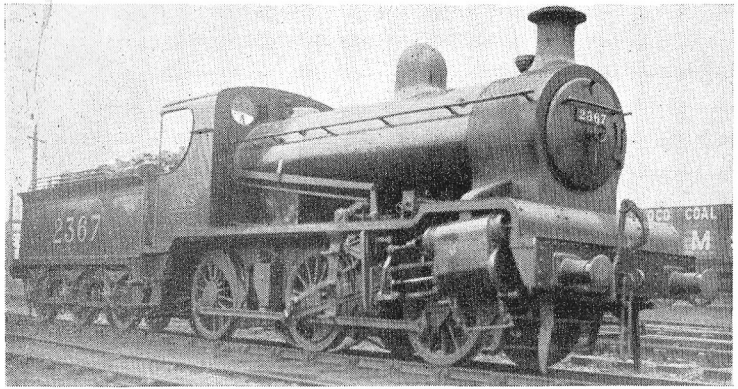
The busy service of local passenger trains around Stoke was mainly in the hands of 0-4-4 and 0-6-2 tanks, backed up by a few older 2-4-2 and 2-4-0 tanks. The 0-4-4s were constructed over a fairly long period, the first one issuing from Stoke in 1907 whilst No. 54 did not appear until 1920. The class has the distinction of being the last N.S.R. type to run in the service of the L.M.S.R., for Nos. 1434/6, the two final survivors, were cut up at Crewe in 1939.

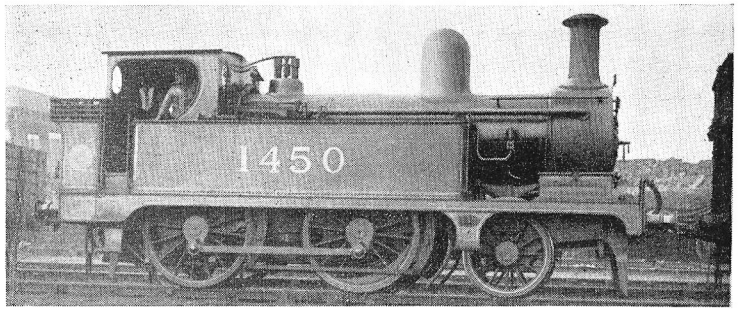
The 0-6-2 tanks were fairly numerous, of two or three classes, and the oldest of them dated back to 1899. Modernised, the type continued to appear right to the end of the N.S.R. as an independent concern—in fact the last four engines, which were under construction at the time of the amalgamation, emerged in 1923 with L.M.S. numbers 2270-3. (The class as a whole was numbered 2234-73). Although no former engines of the N.S.R. are still in service on British Railways, some of these 0-6-2 tanks were sold out of service. No. 2253 went to the Woolmer Instructional Railway where it acquired the name *Marlborough*. As late as 1947 it could be seen at Longmoor still carrying its L.M.S. number plate on the smokebox door and its works plates "Stoke 1909" on the splashers. It had by that time become W.D. No. 70207, but it has since been disposed of, and it is believed it may now be somewhere in Scotland. Five more were sold in 1937 to the Lancashire Associated Collieries, and some of them at least may still be found at Walkden, Manchester, now rejoicing in the names *King George VI, Queen Elizabeth,* and so on.

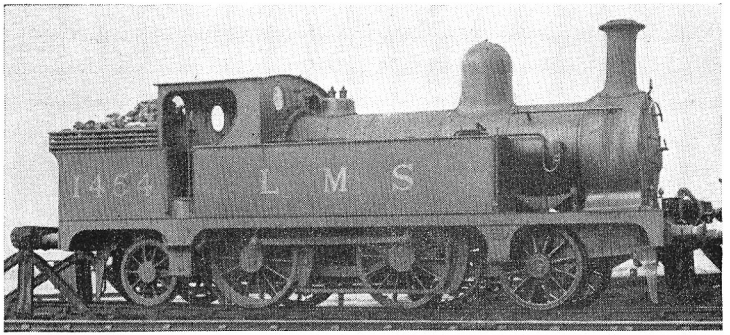
The 2-4-2 tanks were old machines, No. 52 dating back to 1879, but they lasted until 1933-1934. The twelve 2-4-0 tanks, built 1892-5, were the survivors of a larger class, some of which did not last until the grouping. For several years during the 1910's and 1920's No. 17 (afterwards 17a) used regularly to work a morning train into Derby from the Ashbourne branch, stand all day in the engine sidings south of the station between the London and West of England lines, and return on an evening train to Ashbourne. These engine sidings at Derby were always used by N.S.R. and L.N.W.R. engines working into that station (they may even have belonged to these two railways and not to the Midland); it is interesting that the practice survives to this day, for L.M.S. engines working in from Crewe usually turn and stand in these same sidings and rarely go over to the main shed for servicing.

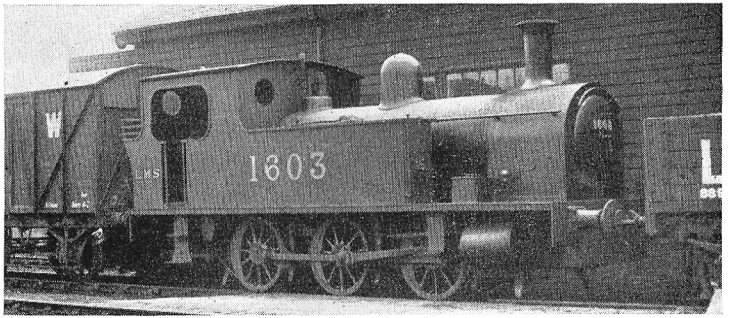
The 0-6-0 tank and tender engines were the most numerous of all, so much so that it is impossible to describe them in full in this article. Most of the 0-6-0 tanks constructed between 1883 and 1899, conformed to a standard pattern and became L.M.S. Nos. 1550-1598.

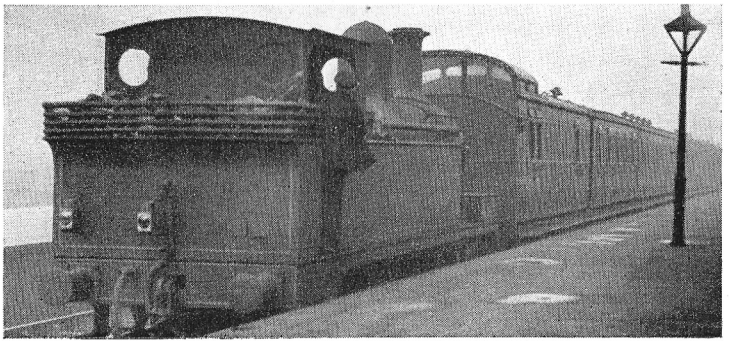






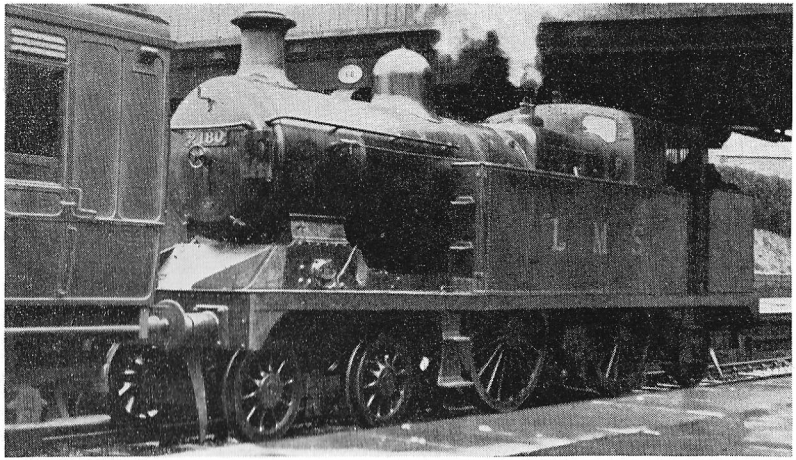


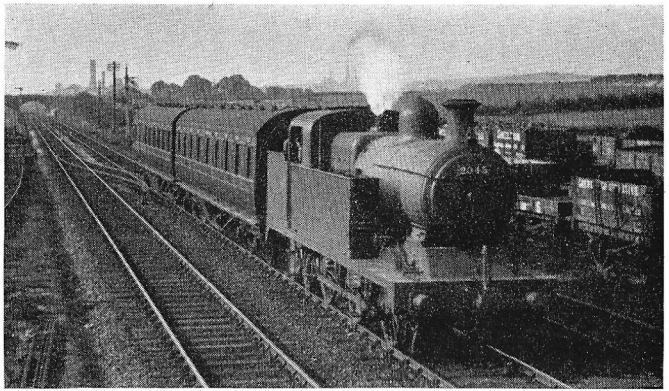


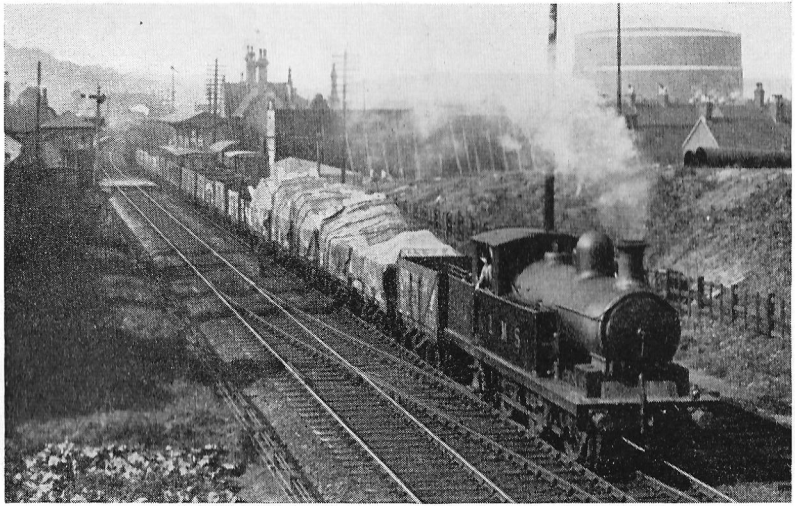


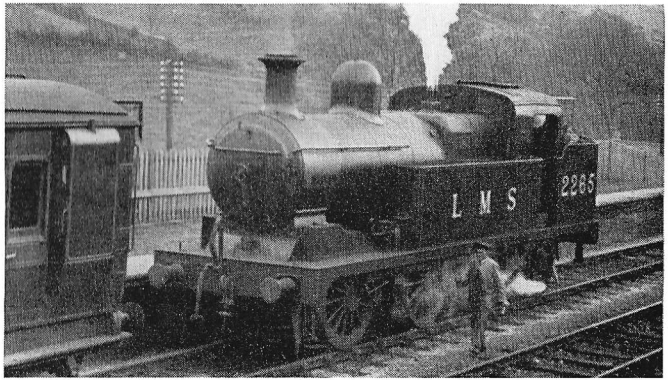
NORTH STAFFORDSHIRE MOTIVE POWER—I : *Left, top to bottom :* 4-4-0 No. 598 ; the four-cylinder 0-6-0 after rebuilding as tender engine No. 2367 ; 2-4-0T No. 1450. *Right, top to bottom :* 2-4-2T No. 1454 at Stoke (7/6/31) ; Kerr Stuart 0-6-0T No. 1603 at Stoke (29/4/33) ; 2-4-0T No. 1451 on a North London train at Poplar (16/1/27).

[*W. H. Whitworth* (3), *H. C. Casserley* (3)









NORTH STAFFORDSHIRE MOTIVE POWER—II: *Left upper:* 4-4-2T No. 2180 at Leek (29/4/33). *Left lower:* 0-6-2T No. 2241 passing Tunstall with a freight train. *Right upper:* One of the 0-6-4 tanks, No. 2045, approaching Trentham with a two-coach local train. *Right lower:* 0-6-2T No. 2265 at Waterhouses (3/5/34).

[*H. C. Casserley* (2), *F. R. Hebron*, *H. Gordon Tidey*

They were gradually withdrawn from traffic in the later 1920's and the 1930's. Of the more individual designs, Nos. 1600/1 were two 0-6-0 saddle tanks formerly 58a and 59a built in 1880/1, and scrapped in 1927 and 1930 respectively. Nos. 1602/3 were two modern outside cylinder 0-6-0 tanks constructed by Messrs. Kerr Stuart in 1919, N.S.R. Nos. 74 and 75; No. 1602 was scrapped in 1932, but 1603 was sold in 1933 to a colliery in the north of England, and may be still in existence. The intervening number 1599 was allocated to an engine of exceptional interest. This was an odd 0-6-0 tank with four cylinders constructed at Stoke in 1922. Not only was a multi-cylinder 0-6-0 tank almost unique, but a further peculiarity lay in the arrangement of the valve setting, which resulted in eight exhaust beats per revolution of the driving wheels instead of the usual four, thus anticipating the same idea which was later used by Mr. Maunsell in his "Lord Nelsons" on the Southern. After three years as a tank this engine was reconstructed as a tender locomotive and renumbered 2367 in the 0-6-0 tender series. As such it became even more of a curiosity, being the only British 4-cylinder 0-6-0 ever seen. This particular engine seems to have been a decided failure from the start, and it was broken up in 1928 as No. 8689 after a life of only six years.

The ordinary 0-6-0s were of several classes, the oldest dating back to 1871. At first they became 2320-66 in the L.M.S.R. list, preceding the Kirtley 0-6-0s, of which a few earlier survivors already bearing these numbers were renumbered in the later 2300's to make room for the N.S.R. engines. When the 2300 series was required in 1927 for Fowler's new standard 2-6-4 tanks, the surviving North Staffords were altered to 8650-88, in the L.N.W.R. section. The last to be broken up was No. 8673 in 1936.

One or two odd engines remain to be mentioned. For working the narrow gauge Leek and Manifold line there were two 2-6-4 tanks, L. & M.V.L.R. Nos. 1 *E. R. Calthrop* and 2 *J. B. Earle*, built by Kitsons in 1904. Although they became L.M.S.R. property they were never allocated L.M.S. numbers, and were scrapped when the line was closed. Lastly, there were three small 0-4-0 saddle tanks for use at the Caldon Low Limestone Quarries, which were worked by the N.S.R.; these rejoiced in the unprepossessing names of *Bobs, Frog* and *Toad*. The quarries were closed some time in the 1920s, but the engines were still to be seen shortly before the war stored in their shed and, moreover, still in the old North Stafford livery of red, lined out in black and yellow, a scheme not unlike the old Midland, although the red was more brownish than the well known crimson lake.

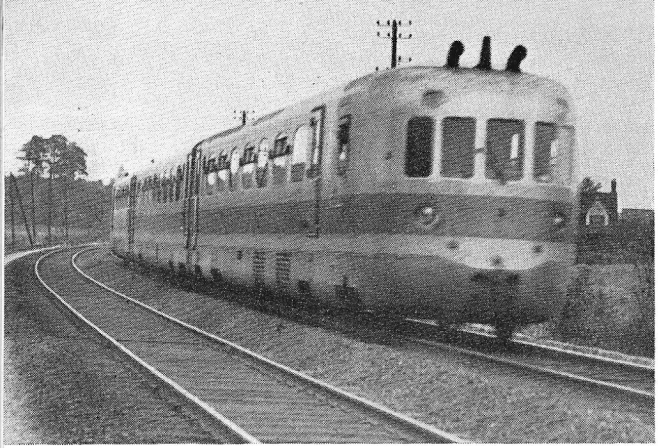
A year or two after the grouping a few trials were made with North Stafford engines on other parts of the system. One or two of the 2-4-0 tanks came to London and were used for a time on the North London Bow and Poplar service, and a 0-6-2 tank was tried out between St. Albans and St. Pancras. There is also an interesting record that two of the 4-4-0s turned up at Willesden in 1924-5 on Wembley Exhibition Specials, probably the first visits of any N.S.R. engines so far south.

It was in the early 1930's that the slaughter of the old North Stafford engines began in earnest, to such effect that by the outbreak of war not a single one remained, apart from the few odd sales previously referred to. The old "Staffy" that was, already only vaguely known to the younger enthusiast, remains but a memory to the older generation. Amongst railwaymen, however, the name still sticks; even to-day it is possible to hear the station announcer at Watford Junction exhorting passengers by main line trains to "Change at Stafford for Stoke and the North Stafford line!"

PLYMOUTH-PENZANCE *(from page 78)*

than is now customary over Saltash Bridge that Keyham, 32.5 miles from Par, was passed in 45 min. 52 sec., and but for a signal stop, North Road would have been reached in 50¼ minutes.

So the "Castles," notwithstanding their 6 ft. 8 in. driving wheels, could put up an excellent performance over this difficult route, though I have no knowledge as to how their handling compares with that which I observed on *County of Cornwall*. The biggest load I have ever known a "Castle" take unassisted west of Plymouth was one of 13 bogies, or 470 tons all told, and with this the then 52-minute allowance of the down "Limited" from Plymouth to Par was exceeded by 2¾ minutes; with 365 tons from Par the engine dropped 2½ minutes to Truro (31 min. 25 sec.), and with 330 tons from Truro there was a loss of 2¾ minutes more to St. Gwinear Road (25 min. 40 sec.), though another "Castle," No 5028 *Llantilio Castle*, with the same weight of train from Par, ran to Truro in 30 min. 40 sec., and on to Gwinear Road in 23 min. 30 sec. So there appear to be limits to what "Castles" can do in these conditions.



A three-car diesel electric *rapide* of the Northern Region, S.N.C.F., between Paris and Lille. *[French Railways*

THE ... by "QUICKSILVER"

Fastest Trains in the World

II.—THE MAINLAND OF EUROPE

SINCE the Second World War the revival of railway speed in certain countries on the mainland of Europe has been little short of extraordinary. Moreover, this recovery has taken place in face of difficulties almost indescribable. In Great Britain during the war we knew what it was to sustain damage to railways by enemy bombing, but even the worst of this bore little relation to the devastation of the railways in countries like France and Italy. French bridges and marshalling yards in particular were the target of the Royal Air Force, in order to deny to the occupying Germans, as far as possible, the use of the railways; in Italy the German armies systematically destroyed the railways as they retreated, even to the extent of perfecting a special machine for the tearing up of railway track. Yet with such vigour has all this frightful damage been made good since the war that France can now boast some of the fastest railway schedules in the whole of her history to the present date, and Italy has her first booked post-war run at over 70 m.p.h. The latest available statistics show 120 runs booked daily in France at over 60 m.p.h. from start to stop, with a total mileage of 11,680, and 29 in Italy of 1,261 miles all told—as compared with 3 in Great Britain measuring 132 miles between them!

As most readers know, railway electrification in France has been forging ahead steadily, and the French National Railways are putting its potentialities to the utmost possible service. Main line electrification between Paris, Bordeaux, Biarritz and Hendaye had been completed before the war, as also part way along the eastern artery of the one-time Paris-Orleans system (the present South-Western Region) towards Limoges and Toulouse, and to Le Mans on the Western Region. Since the war electrification has been completed of the busy Paris-Dijon main line of the earlier P.L.M., now the South-Eastern Region, and it is here that the most startling feats of speed are being displayed. These culminate in a schedule of 152 minutes non-stop for the 195.2 miles from Paris Lyon to Dijon, at an average of 77.1 m.p.h.; a corresponding express in the opposite direction is allowed 155 minutes, at 75.6 m.p.h. average.

These are no flying runs with mere featherweight loads. I am given to understand, from a friend who was in Paris recently, that the 77.1 m.p.h. run of the 18.25 train from Paris to Lyons is now made with a load of ten bogie coaches — including first, second and third class, Pullman and restaurant cars —and two vans, the twelve vehicles having a gross weight of fully 550 tons. This train is booked to cover the 159.6 miles from Paris Lyon to Les Laumes in 121 minutes, and usually runs the 140.7 miles from Lieusaint to Les Laumes in 100 minutes pass-to-pass, or slightly less, which entails an average of 85 m.p.h. or so for the whole of this distance. It is proposed that next summer the "Mistral" *rapide*, a day train in each direction between Paris and the Riviera, shall make the run of 535.6 miles from Paris Lyon to Marseilles, intermediate stops included, in 8 hours, 36 minutes, at an overall average of 62.3 m.p.h.

Much the same energy is displayed on the South Western Region main line between Paris and Bordeaux, and an additional assistance to the speeding up

of the long-distance trains here has been the cutting out of intermediate stops, since electricity replaced steam as the motive power. The two principal *rapides,* northbound in the morning from Bordeaux and southbound in the evening from Paris, now cover the 206.0 miles between Paris Austerlitz and Poitiers without stopping at Les Aubrais (Orleans) and St. Pierre-des-Corps (Tours), as was always the practice in earlier years; the run going south is made in 190 minutes, at 65.0 m.p.h., and coming north in 191 minutes, at 64.7 m.p.h. Another very long electrically-hauled run from Paris Austerlitz is over the 163.8 miles of the Toulouse line as far as Chateauroux, covered in 163 minutes. As showing that these are not merely one or two selected trains, it may be remarked that in the French 1950-1951 winter timetables there are listed eighteen daily non-stop runs over the 195.2 miles between Paris Lyon and Dijon in an *average* time of 192½ minutes; corresponding speed in Great Britain would give an *average* journey of just over 3 hours from King's Cross to Leeds or Euston to Manchester, and 3 hours 10 minutes from Euston to Liverpool.

Before the record 152-minute and 155-minute runs were put in operation between Paris and Dijon, the fastest service over this route was provided by a capacious diesel railcar set, which had the distinction of making the longest regular non-stop run on the European mainland, and the longest in the world save during the summer months when the "Capitals Limited" is working non-stop over the 392.7 miles between London and Edinburgh. This was between Paris Lyon and the Perrache station at Lyons, 317.5 miles covered each way in 295 minutes, at an average of 64.5 m.p.h. The next longest French runs were by two of the Paris-Basle railcar sets on the Eastern Region, which during the summer of 1950 were booked non-stop between Paris Est and Belfort, 275.0 miles, in 260 minutes, at 63.4 m.p.h. Since then, stops at Chaumont and Vesoul have been added, in addition to those at Belfort and Mulhouse, so making the four Paris-Basle railcar services uniform: but including all stops, the time for the 326-mile journey between Paris and Basle still remains at 5 hours 20 minutes by two of the trains, and 5 hours 25-30 minutes by the other two. The fastest diesel railcar runs in France are those of the Western Region services between Paris and Le Havre; one of these covers the 54.9 miles from Rouen to Le Havre in 48 minutes, and another the 86.6 miles from Rouen to Paris St. Lazare in 76 minutes. at 68.6 and 68.4 m.p.h. respectively.

In the summer of 1950 diesel traction claimed 1,602 miles (17 runs) of the total runs at 65 m.p.h. and over, as compared with 3 runs of 414 miles with electric traction, but since the October accelerations the position has been completely reversed. At 60 m.p.h. and over, the French totals were 6,577 miles (65 runs) with electric power, 4,124 miles (47 runs) with diesel-electric power, and 979 miles (8 runs) with steam power. The latter were headed by the unique rubber-tyred train which makes a round trip with a streamlined 4-6-0 locomotive between Paris and Strasbourg, 311.9 miles each way and 623.8 miles daily; this shares with a *rapide* of normal stock a time of 145 minutes for the 157.6 miles from Paris Est to Bar-le-Duc (65.2 m.p.h.), and, in the other direction, one of 88 minutes for the 92.8 miles from Strasbourg to Nancy (63.3 m.p.h.), the latter followed by 156 minutes from Bar-le-Duc back to Paris. Thus it is possible to travel in almost every direction from Paris at better than mile-a-minute speeds, to and from Le Havre, Caen, Bordeaux, Limoges, Clermont Ferrand, Dijon, Lyons, Belfort, Basle, Nancy, Strasbourg, St. Quentin, Arras, Lille and other cities. What would we not give for similar facilities in post-war Britain!

In addition to this, it is important to remember that train punctuality in France, as in various other European countries, is of a very high order. Engine-crews are expected to make up lost time, even when the loss has been by circumstances outside their own control, and bonuses are awarded for time recovery, carefully safeguarded by fuel-saving bonuses (to discourage the flogging of motive power for time recovery purposes) and self-recording speed indicators, from the tapes of which any reckless running with the same object has an infallible check.

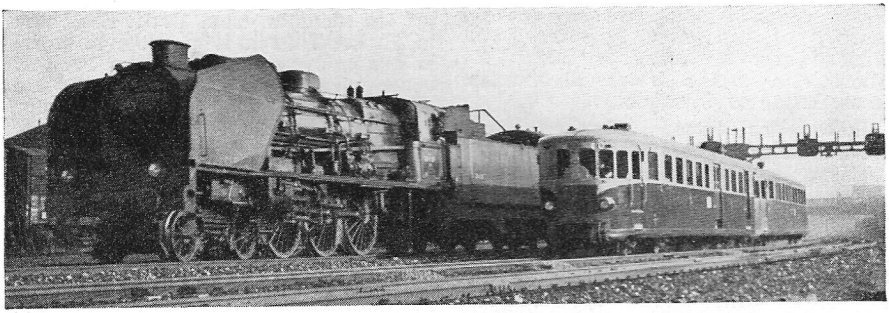
To show how a train crew welcome the opportunity to make up lost time, a recent run from Bordeaux to Paris, with 2D2 electric locomotive No. 5503 and an eight-coach train of 390 tons, is worth mention. Shortly after leaving Bordeaux at 7.25 a.m. the train was brought to a stand because of the breakage of an overhead current conductor, and although the repair was effected at an exemplary speed, the *rapide* was delayed 51 minutes. Nevertheless the arrival at Paris Austerlitz was no more than 4 minutes behind time. The non-stop journey of 206.0

miles from Poitiers to Paris was completed in 167 minutes—24 minutes less than schedule—at an average of 74.0 m.p.h., notwithstanding speed restrictions to 19 m.p.h. through St. Pierre-des-Corps and 31 m.p.h. through Les Aubrais; between the two stations last-mentioned, 69½ miles apart, the average speed sustained was 77 m.p.h., for the speed limit over this stretch is 81 m.p.h., whereas over the remainder of the Bordeaux main line it is restricted to 75 m.p.h.

To the Italian feats of reconstruction I have referred already. They have permitted the insertion in the timetables of the first Italian postwar 70 m.p.h. run over the most important main line in the country—the great traffic artery running south-eastwards from Milan through Bologna and Florence to Rome. Three-car electric streamlined *rapido* No. R 521 now runs the 91.2 miles from Piacenza to Bologna in 78 minutes, at 70.2 m.p.h.; the best non-stop run over the 135.6 miles from Milan to Bologna is made by No. R 527 in precisely two hours, at 67.8 m.p.h. As an evidence of what these Italian *rapidi* can do when extended, it may be recalled that on July 20th, 1939, on a special experimental run, one of these trains performed the amazing feat of running the 195.8 miles from Florence to Milan—two miles further than from Euston to Liverpool—in 1 hour 55.2 minutes, at a start-to-stop average of 102.0 m.p.h. The 11½-mile Apennine tunnel was threaded at between 90 and 100 m.p.h., and the journey included several severe speed restrictions, especially through Florence; the highest speed attained was 126 m.p.h. So far as properly authenticated records go, this is the fastest run between two stops that has ever been made in railway history. Altogether, in the summer of 1950, the Italian State Railways had 14 runs totalling 914 miles booked at 60 m.p.h. and over from start to stop with electric traction, 14 runs of 326 miles with diesel-electric power, and one lone steam run of 19 miles.

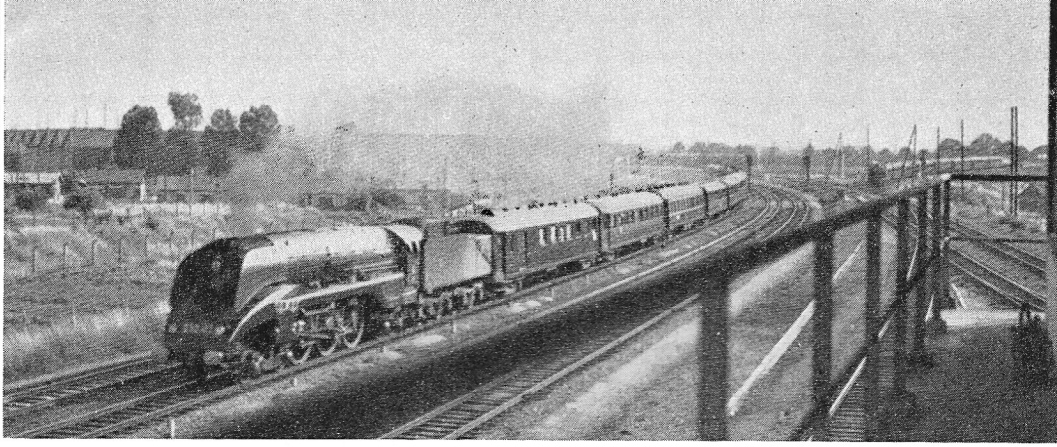
Next in the order of European speed precedence comes little Switzerland. Throughout the war the internal Swiss train services were maintained practically unaltered, and the Swiss had no bomb damage to repair other than that caused by a couple of unintentional raids in which airmen had lost their way. But the Swiss handicap is of another kind altogether; it is that of the extremely steep gradients and sharp curvatures of most of the lines in that mountainous country. Start to stop schedules at over a mile-a-minute, and maximum speeds of 80 m.p.h., might well seem completely impossible in Switzerland; yet both are a commonplace to-day.

The fastest trains in Switzerland are the *liechtschnellzuge,* or lightweight trains, operated between Geneva, Lausanne, Berne and Zurich, and Lausanne, Neuchatel, Bienne and Basle. The lightweight cars are of 70 ft. stock, extremely well-appointed and comfortable, for the most part weighing 28 or 29 tons apiece as compared with the 35 to 37 tons of the standard Swiss stock previously in use on internal services. The locomotives are the amazingly capable Bo-Bo machines of the "400" class, weighing no more than 55¼ British tons apiece, and yet able to handle up to ten of the 70 ft. vehicles, or 300 tons gross, on very fast timings.



It is between Lausanne and Geneva where the line is unusually level and free from curvature, that the highest speeds are run; the distance is 37.4 miles, and five trains are booked to cover it in 34 minutes start to stop, two in 35 minutes, four in 36 minutes, and two in 37 minutes. On these trains I have personally timed speeds up to 83 m.p.h., and noted a continuous average of 75.6 m.p.h. for over 18 miles with a 270-ton train. It may be news to some readers, also, that the Swiss Federal Railways have in their timetables two

[*Concluded on page 93*

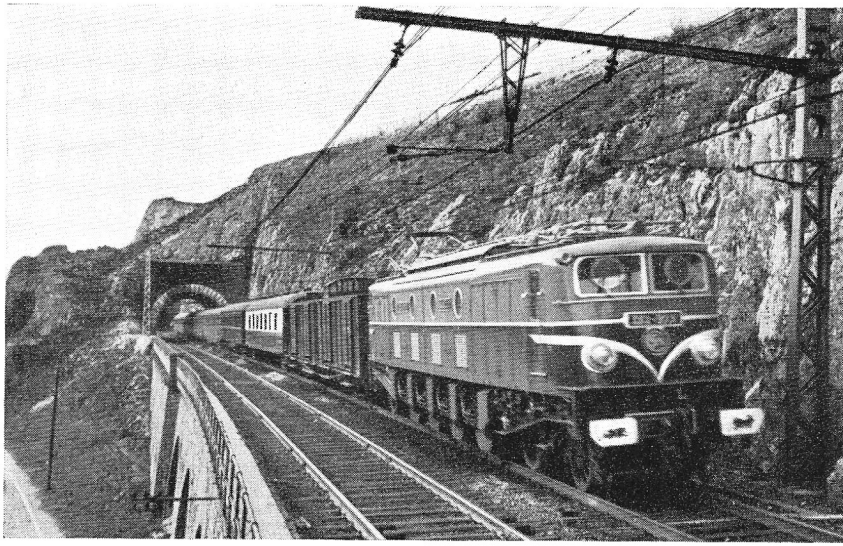


Above : The "Nord Express" passing Joncherolles box, near St. Denis, hauled by De Casso 4-cyl. compound 4-6-4 No. 232-U.1. This 127-ton machine incorporates the longest valve travel ever used in Europe—11.6 in. for the l.p. cylinders (6/50).

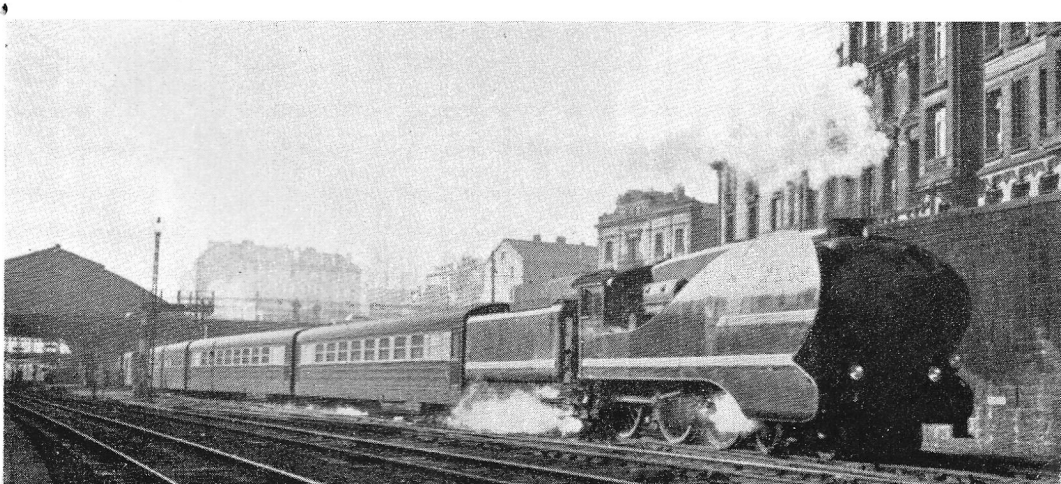
Left : A Paris—Basle two-car diesel electric rapide overtakes a Chapelon Pacific of type 231-C, at the head of a Paris—Luxembourg express near La Villette, in the Paris suburbs on the Eastern Region.

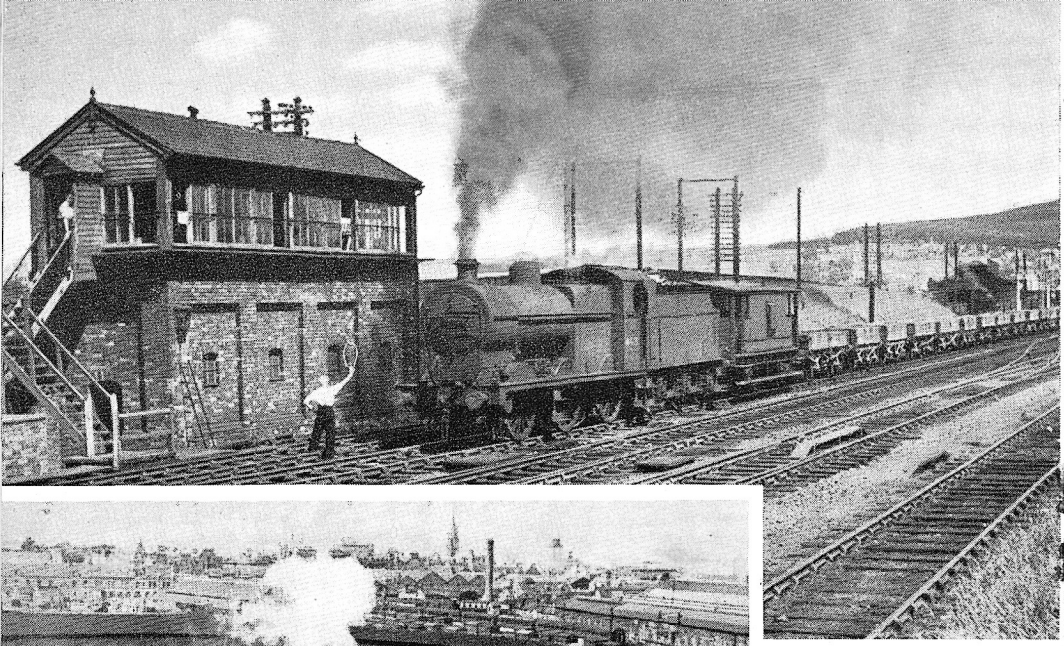
MODERN FRENCH EXPRESSES

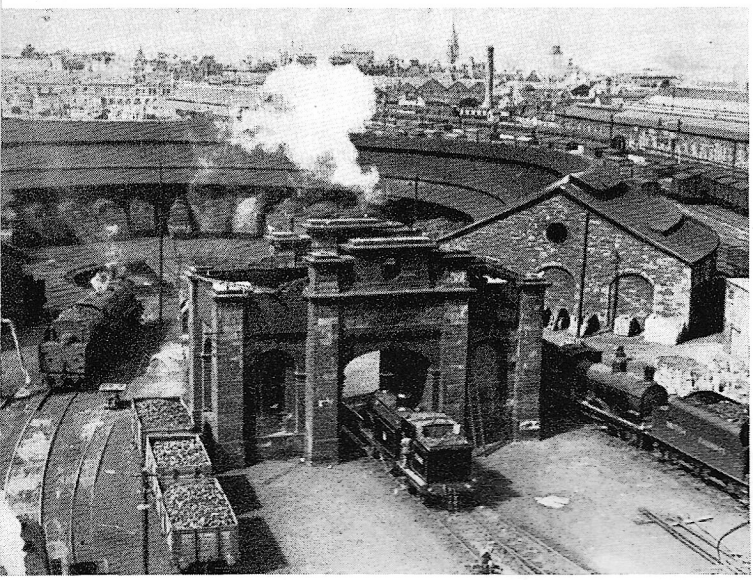
Right : The Paris—Marseilles "Mistral" express of the South-Eastern Region, photographed between Plombieres and Dijon, with 2-D-2 electric locomotive No. 9103 in charge (12/4/50). [*Y. Broncard*



Below : A streamlined 4-6-0 pulls out of Nancy, Eastern Region, with the Strasbourg—Paris rubber-tyred train (8/4/50). [*Y. Broncard*







PICTURE PARADE

Left upper : The signalman of Penrith No. 1 box has the tablet ready for the crew of L.M. 0-6-0 No. 44121, heading a ballast train for the Keswick line (5/6/50).
Left centre : The imposing gateway (in fact, the water tower) to Inverness round house, taken from the coaling plant. *Left lower :* Pacific No. 46222 *Queen Mary* accelerates away from Penrith with the up "Royal Scot" (5/6/50).
[*E. D. Bruton, P. L. Melvill (centre)*

Above : Class "V2" 2-6-2 No. 60888 toils up the 1 in 70 through North Queensferry to the Forth Bridge with an up fish train from Aberdeen.
Below : Class "B12/3" 4-6-0 No. 61570 passing Bentley, south of Ipswich, with the summer 2.8 p.m. Felixstowe Beach—Liverpool Street express. The line at the left is the branch to Hadleigh (7/6/49).
[*J. Robertson, G. R. Mortimer*

LEVEL PEGGING—"Patriot" 4-6-0 No. 5507 *Royal Tank Corps* with an up Perth—Euston express on the stretch of level track near Bay Horse, south of Lancaster. [*W. Hubert Foster*

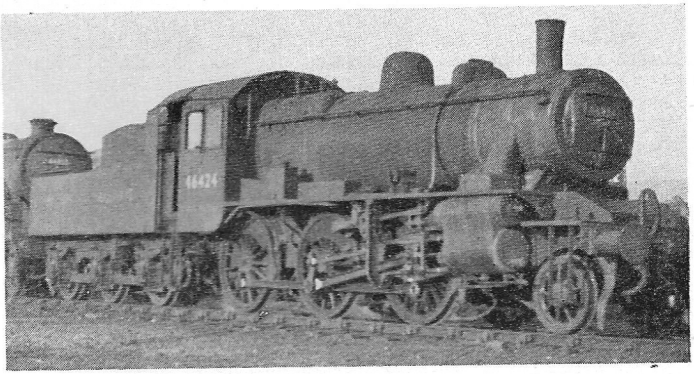
FASTEST TRAINS *(from page 88)*

scheduled runs of over 100 miles non-stop; the trains concerned are both heavy International sleeping car expresses, and are booked over the 105.4 miles between Lucerne and Bellinzona in 146 minutes, at an average speed of 43.4 m.p.h., which includes the tremendous climb from both directions to the Gotthard Tunnel, 2,000 feet up in the southbound direction, and an ascent of as much as 3,000 ft. northbound from Bellinzona to Airolo. In all, Switzerland has a total of nineteen daily runs, totalling in length 569 miles, booked from start to stop at 60 m.p.h. or over.

A few notes, in conclusion, about other European railway systems with time-tabled mile-a-minute running may be of interest. The Swedish State Railways are among their number, and here the standard of speed is definitely higher than it was before the war. The principal Swedish main lines are now almost entirely electrified, and the fastest running is over the important route between Stockholm and Gothenburg, where there are runs timed from start to stop at up to 64.1 m.p.h. Notable bookings are over the 60.9 miles from Alvesta to Hassleholm in 59 and 60 minutes, and over the 89.5 miles from Gothenburg to Skovde in 89 minutes. In the neighbouring country of Denmark, some of the diesel-operated *Lyntog* streamline trains have been restored, and their daily schedules include such runs as Roskilde to Slagelse, 38.3 miles, in 35 minutes (65.6 m.p.h.), and from Copenhagen, the capital, to the Great Belt ferry terminal at Korsor, 68.3 miles in 65 minutes (63.0 m.p.h.).

In Belgium and Holland, which had both established a high standard of speed before the war, until now the only mile-a-minute restoration has been by the Belgian National Railways between Brussels and Antwerp, where three electric trains in each direction daily are making the run of 27.5 miles in 25 minutes—a very smart 66.0 m.p.h. booking. Most surprising of all, perhaps, is that in devastated Germany some mile-a-minute runs have re-appeared, and, even more remarkable, in Russian-occupied territory. Diesel-electric streamline sets are working once again, and on the Berlin-Hamburg main line, once renowned for its speed, these units are booked over the 144.7 miles from the Zoo station at Berlin to the Russian control point of Schwanheide in 134 minutes, at 64.8 m.p.h., and in the reverse direction in 141 minutes, at 61.5 m.p.h. This is still a long, long way from German speed in 1939, when diesel streamliners were responsible for eight daily runs booked at between 80 and 83.3 m.p.h. from start to stop, and for 25 further booked at between 75.2 and 79.7 m.p.h.—3,558 miles daily in all at these speeds—but it is a start.

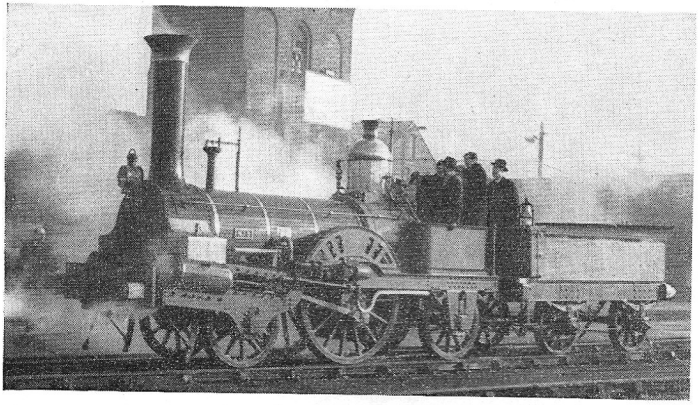
At the time of the outbreak of war, Germany had 207 daily runs, 13,614 miles in length, booked at over a mile-a-minute from start to stop, Great Britain 116 (12,016 miles), France 120 (10,527 miles), Holland 393 (7,382 miles)—a marvellous achievement for so small a country—Italy 116 (7,324 miles), and Belgium 85 (2,525 miles). The recovery of France and Italy, as we have seen, and the improved position of Switzerland and Sweden, give great hopes for future European speed; one only wishes it were possible to say the same thing or to see even a glimmer of hope for British railway speed to-day.



HORROR was our first reaction to this picture which shows Class "2MT" 2-6-0 No. 46424 (misprinted last month as 46404) at Derby (14/1/51), fitted with a new stovepipe chimney. We hear No. 43026 is another "4MT" Mogul that has received a stovepipe chimney.
[B. Stafford

NEW RAILWAY EXECUTIVE CHAIRMAN

Mr. John Elliot has been appointed chairman of the Railway Executive in succession to Sir Eustace Missenden. Mr. Elliot, who was successively publicity officer, assistant traffic manager, deputy and then acting general manager of the Southern Railway, has been Chief Regional Officer of the Southern Region and, in 1950, of the London Midland Region since nationalisation.



FESTIVAL VISITOR—On 12/1/51 Buddicom 2-2-2 No. 3 of the former Western Railway of France was put into steam at Bricklayers Arms. Built at Rouen in 1843 by two British engineers, Buddicom and Allcard, it has been loaned for exhibition at the Festival of Britain. Known here as the Crewe type, similar engines ran in Britain on the L.N.W.R., Caledonian and Highland Railways. *[C. C. B. Herbert*

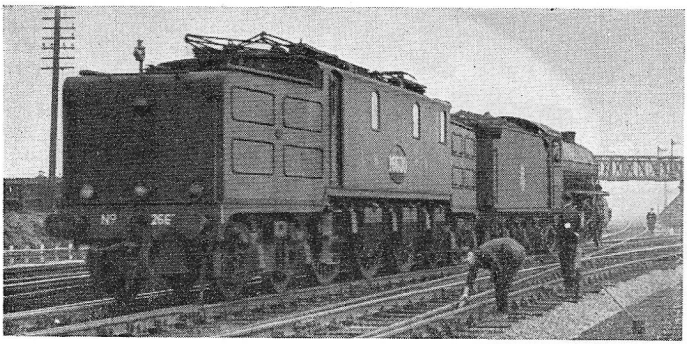
No. 70000 *(Concluded from page 75)*

250 lb. per sq. in. To permit increased power to be transmitted to the rail, we have now 61½ tons adhesion instead of 44 tons, and the engine weight shows an increase from 64 to 94 tons. Obviously there must have been a vast improvement in the quality of Great Eastern track to permit the running of the new engines between Liverpool Street and Norwich, also to and from Parkeston Quay, which will be their first assignments. The total engine and tender wheelbase of 58 ft. 3 in. makes turning just possible on a 60 ft. turntable, though it will be much easier on a 65 ft. table.

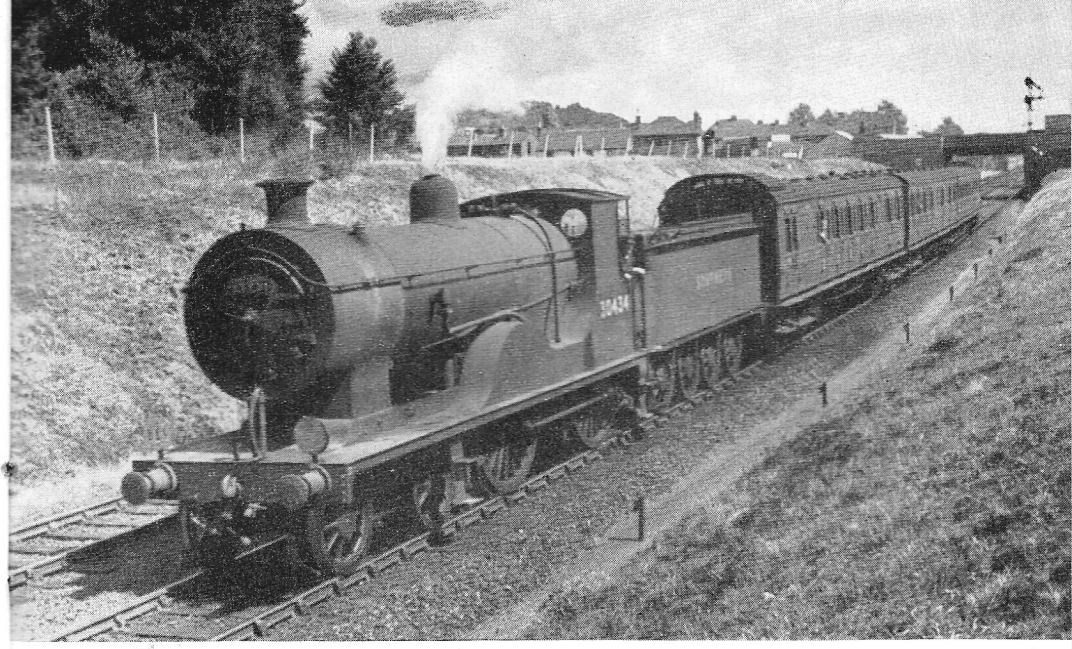
Before coming to London for the naming ceremony, No. 70000 made a number of trips from Crewe. Enginemen who have handled No. 70000 seemed pleased with their new mount. Mr. W. Robertson travelled from Carlisle to Crewe behind the new engine on January 13th, on the 14-coach 11.52 a.m. to Birmingham (441 tons tare and 475 tons gross), and the performance would have been deemed good even with a much more powerful "Duchess."

Notwithstanding permanent way slowings just after starting, and again just north of Shap station, No. 70000 passed Shap Summit, 31.4 miles, in 48 min. 20 sec.—6¾ minutes less than schedule. Up the 1 in 131 from the Carlisle start there was an acceleration to 41 m.p.h., and speed had not fallen below 45 on the long 1 in 125 climb from Clifton when the second permanent way check was made. There was considerable restraint downhill, and speed was not allowed to rise above 74 m.p.h. anywhere; the best running was at 68 m.p.h. on the level near Garstang. After further signal checks at Grayrigg, Lancaster (nearly a stop here), and Oxheys, the train was brought to a stand by signals at Preston, having covered the 90.1 miles in 110 min. 25 sec.; but the net time was not more than 110½ minutes. As the timetable allows 114 minutes, this was an auspicious début.

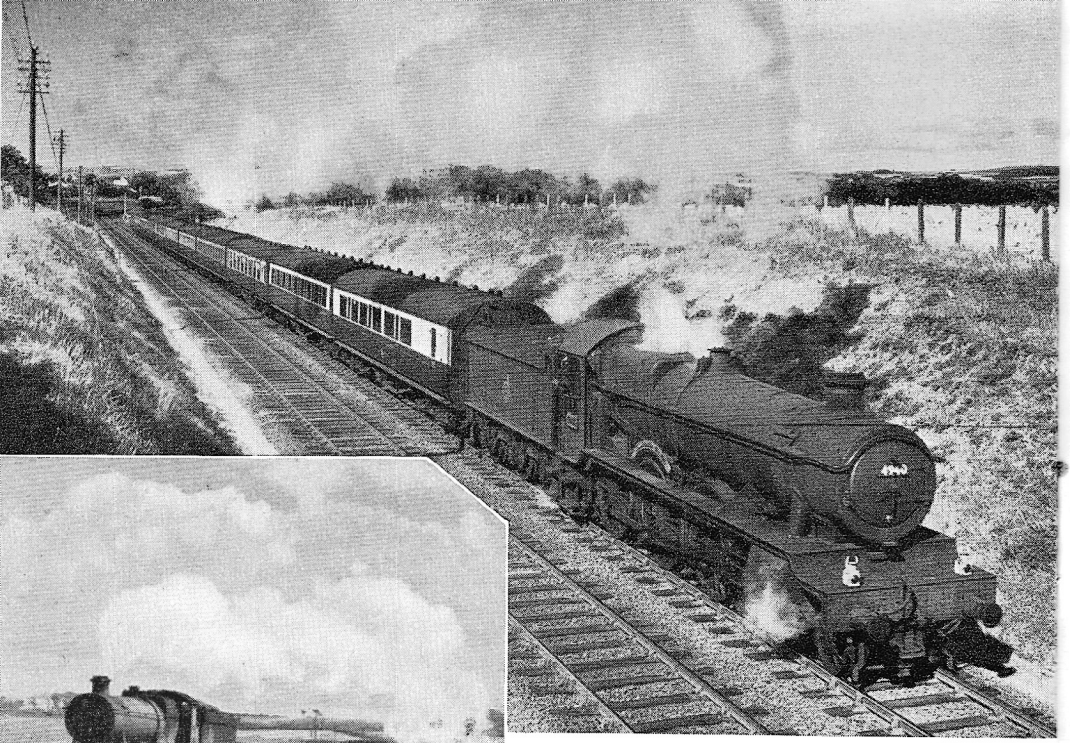
On Wednesday, January 31, *Britannia* took up service on the 10 a.m. "Norfolkman" from Liverpool Street to Norwich. There was some substantial time-gaining on the Wednesday and Thursday, but on the Friday's up journey Nemesis overtook the engine, which had to be removed from the train at Kelvedon owing to a cylinder failure. She returned to service on February 5.

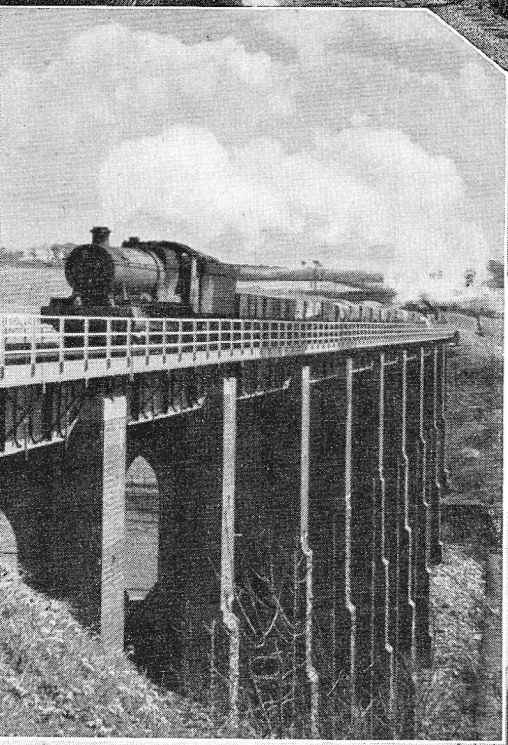


A LAST LOOK at ex-North Eastern 2-Co-2 electric locomotive, British Railways No. 26600. She was in tow behind Class "KI" 2-6-0 No. 62058 at Pelaw Junction, Newcastle, on her way to a private contractor for breaking up (15/12/50). *[C. C. B. Herbert*



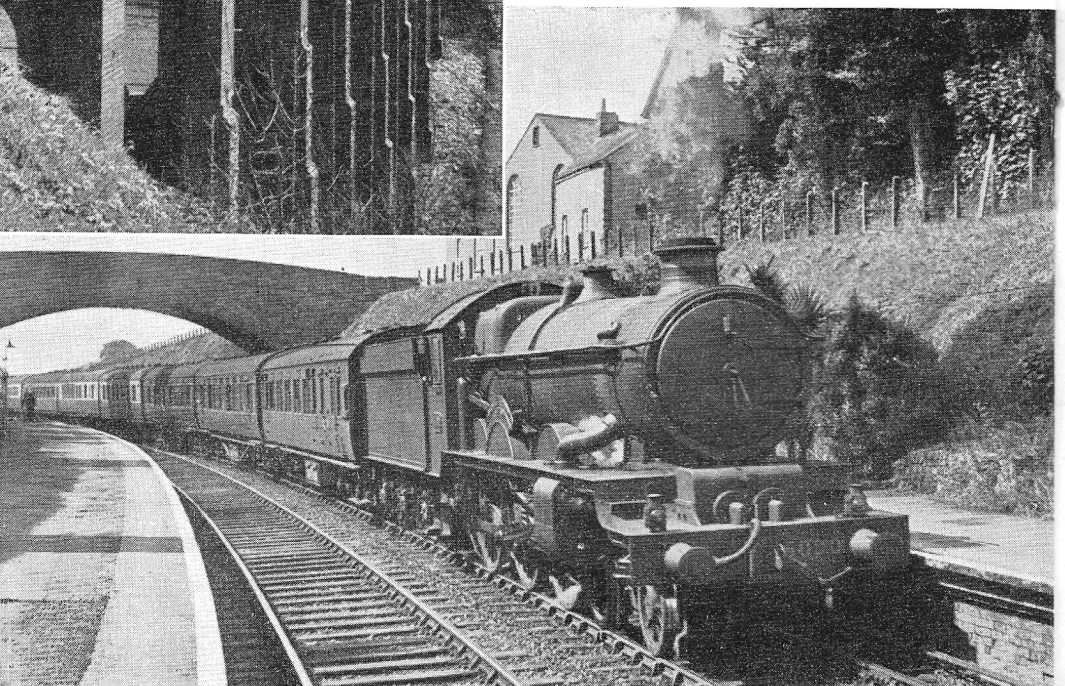
SOUTHERN SCENES—*Above* : Class "L12" 4-4-0 No. 30434 leaving Shalford with a Reading—Redhill train (9/8/49). *Below* : "Lord Nelson" Class 4-6-0 No. 30864 *Sir Martin Frobisher* emerges from Bincombe North tunnel with a Bournemouth Central—Weymouth stopping train (31/5/50). [*P. M. Alexander, J. C. Flemons*





PLYMOUTH—PENZANCE (*see page 76*). *Above :* "Hall" Class 4-6-0 No. 4940 *Ludford Hall* climbs out of St. Erth with a relief express from London (5/8/50). *Left :* "Hall" Class 4-6-0 No. 4946 *Moseley Hall* crosses Liskeard viaduct with a down freight. *Below :* "Castle" Class 4-6-0 No. 5090 *Neath Abbey* tops the 1 in 67 bank to Grampound Road station with a Penzance—Liverpool express.

[*B. A. Butt, R. E. Vincent, P. Ransome-Wallis*



"C. J. speaking"

A PERSONAL COMMENTARY BY CECIL J. ALLEN

ON RESTAURANT CARS

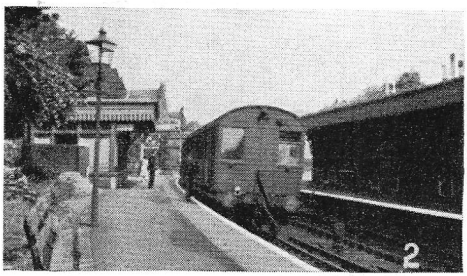
AMID the gloom of much that is happening on British Railways, it is refreshing to hear of one railway ancillary at least which is succeeding in "breaking even." Indeed, it is refreshing in a literal as well as a figurative sense, for the activity concerned is that of the Hotels Executive, which is responsible also for catering in railway refreshment rooms and restaurant cars throughout the country. A review in mid-January by Lord Inman, retiring Chairman of the Hotels Executive, stated that refreshment rooms were showing "a reasonable profit," that the majority of the hotels were paying their way, and that the only deficit was on restaurant car working, which showed an average loss of 8d. for every meal served nothwithstanding the 1950 advance to 5s. in the price of lunch and dinner. However, this loss was largely reduced by a profit of 5½d. per meal on what each passenger drank!

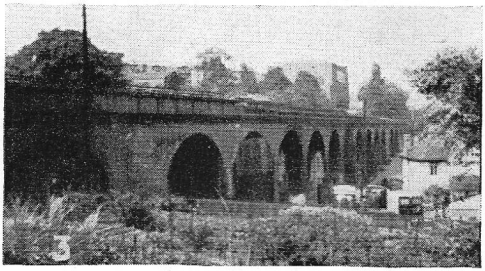
The railway restaurant car is always a difficult problem, because a good proportion of the hours worked by the car staffs is unproductive. In general, railways which run their own restaurant car services are prepared to face some loss on catering, regarding this, in effect, as part of the expense of providing amenities of travel that attract the passenger. The Pullman Car Company can show a profit, in part by its higher prices for meals, and in part by the contribution that charges for Pullman seats can make towards the expenses of catering. However, there are a good many passengers who find that a charge of even 5s. for a meal, with drinks and tips added, is beyond their means, and for them it is good news that the use of buffet cars is to be increased until every train making a journey of three hours or more eventually will be provided at least with buffet facilities.

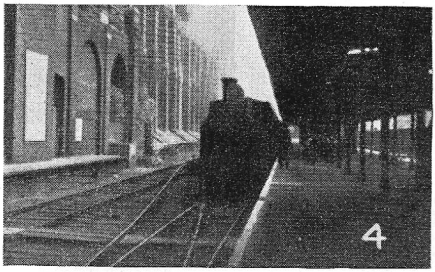
But to my mind this does not meet the whole of the need, for it may be presumed that buffet cars will not be attached to trains already provided with restaurant cars. In the United States it is customary on the majority of long distance trains to provide both restaurant cars and some form of buffet or cafe, usually in different parts of the trains. In Great Britain this is done only on the "Flying Scotsman," but in so extravagant a way that it can hardly earn unstinted commendation. For on the "Scotsman" no fewer than four cars (first and third restaurants, kitchen car and buffet car), weighing in all 158 tons, are given over to the service of food and drink, or, allowing for the fact that three bays of the first class restaurant are used for ordinary seating, a net weight of 140 tons—nearly 30 per cent. out of the total 473-ten tare weight of the 13 vehicles composing the train. As the train formation is limited strictly to 13 coaches, this results, on busy days in the summer, in passengers being turned away from the "Scotsman" because of lack of seating.

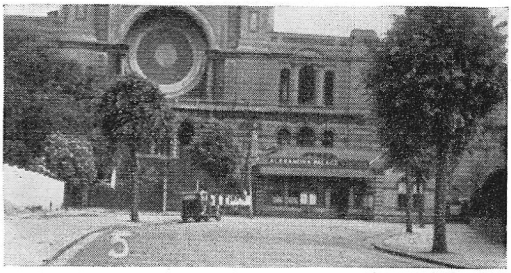
Equally, if restaurant cars are run at a loss it is difficult to find justification for running two independent sets of cars in the same train, as is done daily for 299 miles with the Glasgow and Perth cars on the "Royal Scot" between Euston and Carlisle; still less does it seem defensible to run both Liverpool and Barrow cars together for 158 miles to Crewe on the 12.5 p.m. from Euston, or Perth and Barrow cars for 209 miles from Preston on the 7.29 p.m. Euston arrival. In all three cases one set of cars could handle all the business comfortably, and there are a number of ways in which the necessary return workings of stock could be arranged.

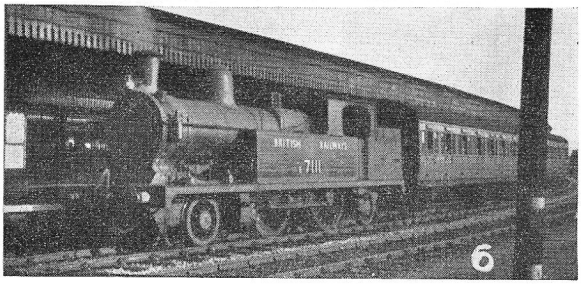
For example, the Barrow restaurant car, or, alternatively, a buffet car, could be considerably better employed on the 6.40 a.m. from Euston, a useful "semi-fast" which badly needs refreshment facilities, returning, as now, on the 1 p.m. from Barrow as far as Preston (from which the Barrow passengers have the use of the Perth car), and held there to provide refreshments on the now foodless 6.5 p.m. from Preston to Euston. As for the Perth cars, in the down direction why not from Crewe to Perth on the 9.23 a.m., another long-distance train without any meal facilities, Perth to London next day on the 8.55 a.m. as now, and London back to Crewe on the 11.32 a.m. semi-fast on the third day? In this way four additional trains would be provided with refreshment facilities without one single mile of addition to present restaurant car mileage, or any loss of present refreshment facilities except on the 4.35 p.m. from Carlisle to Perth. As regards the most desirable combination of both buffet and restaurant accommodation in two vehicles, the much-execrated Bulleid "tavern cars" incorporated precisely the right principle, within reasonable load limits, had not the interior arrangement of the vehicles been carried out in so fantastic a fashion.











THE ALEXANDRA PALACE BRANCH

1. Class "C12" 4-4-2T No. 67356 soon after leaving Finsbury Park with the Palace auto-train. 2. Cranley Garden, a typical station; the station-master is just boarding the train. 3. St. James' Lane viaduct. 4. Alexandra Palace station; note the private platform on the left. 5. The entrance to Alexandra Palace station. 6. The last survivor of the ex-G.C. Class "F2" 2-4-2T, withdrawn 10/12/50, with the auto-train at Finsbury Park.

[1, *D. A. Dant*; 2-5, *H. W. A. Linecar*; 6, *J. F. Aylard*

The ALEXANDRA PALACE BRANCH

by H. W. A. LINECAR

A BARE eight miles from Westminster there survives a country branch operated by steam, still outside the authority of London Transport, and with an interesting history.

A year after the Prince Consort's death in 1861, a second Great Exhibition was held, this time at South Kensington. Simultaneously a feeling arose that a similar structure to the Crystal Palace, the home of the 1851 Exhibition, later transported from Hyde Park to South London, should be built for the benefit of North London. Paxton's "greenhouse" was claimed by the journals of the time to be "almost inaccessible to the inhabitants of the area north of the Thames." From the materials of the exhibition halls of the Second Great Exhibition, therefore, a new Palace was erected on a commanding height at Muswell Hill. It could not be called after Prince Albert, for London's Royal Albert Hall already had a monopoly of that title, so what better compliment could have been made than to call it after the newly-married Princess of Wales—Alexandra, eldest daughter of King Christian IX of Denmark and wife of the future Edward VII?

This took place at a time of railway expansion. The newly constructed Metropolitan and Metropolitan and District railways were in operation, and suburban branch lines were pushing out into what was then London's country. The "dormitory boroughs" were in the making. The Great Northern Railway, the East Coast route, had been running its trains through Finsbury Park Station, then Seven Sisters, for twelve years, and a small company with a large title, the Edgware, Highgate and London Railway, had obtained powers (in 1862) to construct a line from Seven Sisters Road to Edgware, through Highgate. This it did, only to be absorbed by the Great Northern in 1867, a month before the line was ready for opening. In 1866 the E.H. & L. obtained powers to construct a short branch line, 1¼ miles in length, from Highgate to Muswell Hill, and a separate company, the Muswell Hill, proposed to continue this line to the Alexandra Palace and beyond, to link up with the Great Eastern at Palace Gates, Wood Green, on the other side of the hill. By May, 1873, this line had reached the Palace, and was ready for the official opening of that vast building on the 24th. It never reached further, terminating under the north walls of the Palace.

At about this time the Muswell Hill and Palace company, as it had become, was the proud possessor of a locomotive, which solemnly worked the trains over the odd half mile between its terminus and Muswell Hill station. But the service on the branch was of short duration, for within a month of its opening the Alexandra Palace was burned to the ground. Service was therefore suspended.

Undaunted by disaster, the promoters of the Palace commenced to build again, and after some remarkably quick work opened a new architectural monstrosity in May, 1875, covering some seven acres, the Palace which we see to-day. From its station a service of steam trains commenced to run to places as far away as Moorgate, while the London, Chatham & Dover and the South Eastern Railways provided a service of trains giving connections to the south of the Thames, and the North London Railway added its trains emanating from Broad Street to the quota. N.L.R. 4-4-0 tanks, G.N.R. 0-4-4 well-tanks of Sturrock and Stirling design, 4-4-2, 0-8-2 and 0-6-2 tanks of Ivatt and the later 0-6-2 tanks of Gresley have all worked their turns through Highgate to the Palace, together with the 0-6-0 tanks of the L.M.S.R. which took over the North London trains in later years, but the traffic in terms of passengers was never very substantial. Though the district grew as a residential area the arrival of tram and bus facilities and the fact that the Palace, in spite of its much vaunted attractions, never really succeeded in becoming that Mecca of entertainment and culture that its promoters had hoped, robbed the railway of much of its possible traffic.

So the branch line continued its gradually dwindling service, with the "foreign" trains falling off one by one till, under the new works scheme of the 1930's, the London Transport Board took a hand. This body commenced to electrify the line as a part of its scheme to link up the Northern line with the Great Northern & City tube railway, and to reach out to Elstree, partly over the tracks of the onetime E.H. & L.

But though tube trains began to run on other parts of the E.H.L., though colourlight signals appeared at Highgate station, below whose foundations a new tube was driven, the Alexandra Palace branch was reprieved, at the price of a

second world war. True, cables and compressed air lines ran out alongside it, electric rails were laid and the scheme brought within a few months of opening, but thus far only were the alterations allowed. Nor is there yet any definite date given for the final transfer to tube operation.

Throughout the war and the after-years, the Finsbury Park-Alexandra Palace line became almost a railway on its own, its service maintained by two push-and-pull units of antique design. Two-coach trains have taken the place of the familiar twin quadruplet articulated sets, which operated these services as they did and still do elsewhere in the L.N.E.R. North London area, and the six-coach L.M.S. trains to and from Broad Street. The present units have been hauled by a quartet of veteran tank locomotives, "C12" 4-4-2 tanks Nos. 67356/74 and "F2" 2-4-2 tanks Nos. 67108/11, both of which latter have now gone to the scrapheap. In the summer of 1951 "N7" 0-6-2 tank No. 69694 was lending a regular hand on the branch; a new arrival is "C13" 4-4-2 tank No. 67416, sent from Gorton to King's Cross for this duty on November 13th last. These locomotives keep up the long tradition of always running with the locomotive chimney towards the north, as did the tank locomotives of the L.N.E.R. on the Barnet line. The veterans make much of the ruling gradients of 1 in 60 from Finsbury Park to Highgate, approaching the latter station through a short, double bore tunnel, which fits the size of the two-car trains almost as snugly as do the tunnels of the tube below. The station itself, a curious architectural mixture of modern unfinished L.T. concrete and antique E.H. & L. woodwork, is bounded on three sides by high, wooded banks, out of which the tunnel shell of a yet uncompleted escalator to the railway projects like the muzzle of a Wellsian space gun.

The push-and-pull snorts into another short, snug tunnel at the end of the platform, and emerges at the top of its climb alongside Highgate Wood. A few yards north of the tunnel the train rattles over the points of Park junction and begins its run along the Alexandra Palace branch proper. On the left stand what were once carriage sheds of the L.N.E.R. where the Royal Train was often housed; they are now occupied by trains of the Underground, which use the electrified lines of the Barnet route to work from East Finchley to this depot.

Cranley Gardens station is situated at the north-eastern corner of Highgate Wood. Here trees and flowerbeds line the platforms, and though the track may boast some rusty electric rails, and though power cables may sneak along under the platform walls, the station lighting is by gas lamps, typical of a country station. Gone, too, are the colourlight signals of Highgate and Park junction; the train starts in obedience to the less familiar semaphore.

The train rumbles along behind trim gardens, past an old-fashioned manual signal box, typical of the branch, over the main engineering feature of the branch, the St. James's Lane viaduct, quite a considerable structure for so small a line, and grinds to a stand at Muswell Hill. Here the stationmaster of Cranley Gardens, who whistled the train away from the previous station, now alights from it, and prepares to do the same duty here, afterwards stepping into a little office at the north end of the platform which bears all the tokens of having been a signal box.

On leaving Muswell Hill the electric cables which have followed us faithfully all the way fall back, to leave a wide expanse of grass on the left. Here were the sidings of the Palace company and the home of its locomotives. Here, too, stands an impressive three-arm gantry, with another country signal box beyond. The skyline is filled with the bulk of the Palace, and in a moment the train rattles over the points and enters the station, an island platform between two running roads, with a private platform giving direct access to the Palace basements on the right, served by a third disused road.

The station is dark and cavernous, still retaining the air of the more dilapidated type of country terminus. Yet it has had its moments, as when the B.B.C. summoned a Gresley Pacific and an Ivatt Atlantic for a television programme in the thirties, and when Stirling's 4-2-2 No. 1, with "Flying Scotsman" of the 1880's, was on view in 1938. Above the station tower the northern walls of the Palace, a cliff of crumbling brick and shattered glass—so much so, that during the recent war the station was temporarily closed, since brick and glass threatened to fall upon it. more through bad drainage and a subsoil of gravel and clay than Hitler's bombs.

Neither the slowly disintegrating Palace above nor the railway below have ever quite realised their dreams. The railway failed to reach its eastern neighbour, and though the Palace grounds are as popular as Hampstead Heath, the building never quite caught on. Meantime the signalman, drowsing in his paint-scaled box, listens stolidly and with caution to every new rumour of the future advent of electric trains.

RETURN TO PARKSTONE

Unfortunately this interesting letter from Bournemouth reached us too late for inclusion with the brief notes we published last month, to which it adds fascinating details of operations over Parkstone bank.

I READ with much interest the article by Mr. Semmens on the Mortehoe bank. I notice he asserts that no loose banking is allowed on the Western Section of the Southern Region, but I think he must have overlooked the banking arrangements between Poole and Branksome on the Weymouth-Bournemouth line. Express trains running non-stop from Poole to Bournemouth Central are loose-banked as required to Branksome, and bankers are coupled only to trains stopping at Parkstone and Brankstone. On one occasion last summer I saw a light Pacific with an 11-coach load charging the foot of the bank at Poole Park with an uncoupled banker trundling unconcernedly along some 20 yards behind the rear coach; I could not see whether the banker engaged the train again further up the bank!

Operations on this stretch of line are of considerable interest on summer Saturdays, particularly between 9 a.m. and 11 a.m., in the down direction, and between 1.30 p.m. and 3.30 p.m. in the up, when traffic is at its busiest. The procession of up trains during the latter period is very tightly timed; in the 1950 summer timetable, 11 trains were booked to leave Poole in those two hours, often with two or three relief trains and an empty stock working sandwiched between them. All types of Southern engines may be seen, while the Somerset and Dorset trains can offer Class "5" 4-6-0s, Hughes and Ivatt 2-6-0s, Class "4F" 0-6-0s, Class "2" 4-4-0s, and even S. & D.J. 2-8-0s; it is amusing to see those Consolidations charging the bank with a seven-coach local, their tiny driving-wheels revolving at great speed.

The banking arrangements are somewhat odd. All classes of Southern motive power normally are banked with loads exceedings 10 corridors, even including "Merchant Navy" Pacifics; yet Southern Moguls have no difficulty in tackling 10 W.R. corridors unaided on the Cardiff trains, including the difficult restart at Parkstone. On the other hand, Midland trains are hardly ever banked; the 0-6-0s and 2-6-0s take up to 10 coaches, and Class "5" 4-6-0s 12 (including a 12-wheeled dining car) on the "Pines Express" and similar workings. Admittedly, their speed through Parkstone on heavy trains is very low, and if stopped by signal in that station, they can only restart with difficulty.

In the early summer of 1949 an experiment appears to have been made in reducing the amount of banking, and it was good to see "Merchant Navies" bustling through Parkstone at the head of 400-ton trains without any difficulty and often blowing off. But on a dry and sunny afternoon a "Q" Class 0-6-0 faced the bank unaided with an 11-coach train (the 1.35 ex-Swanage), blasting red-hot cinders from its chimney all the way up and raising enough lineside fires to keep the local fire brigade busy for the rest of the day. After this episode, normal banking seems to have been speedily resumed. The bankers are usually 0-4-4 tanks or elderly 0-6-0s, but on Sundays a light Pacific running tender first is often used to bank the heavy 2 p.m. ex-Weymouth.

As may be expected, timekeeping is often poor when traffic is so heavy. The 1.33 from Swanage was a frequent offender on Saturdays last summer; apparently the stock used for this train forms the 9.17 a.m. from Waterloo, due at Swanage at 12.38 p.m., and the turn-round time leaves an insufficient margin if the down train runs late. On one 1950 Saturday Midland trains were taking nearly an hour to travel from Broadstone to Bournemouth West (eight miles), such was the queue to ascend the bank.

Another offender is the "Pines Express," due at Bournemouth West at 5.52 p.m. If this train leaves Bath more than about 10 minutes late, the 4.45 local from Templecombe is allowed to run ahead to connect at Poole with the 5.35 from Weymouth to Waterloo. The "Pines Express" crawls through central Dorset behind it, then waits outside Poole for 15 minutes or so to allow the Waterloo train to run through first, finally arriving at Bournemouth West at about 6.45. I have yet to hear of an earlier arrival on a summer Saturday, but the authorities seem quite satisfied with the present timing, which has prevailed for the past three summers with little alteration.

The two level crossings at Poole, which carry heavy road traffic, also cause much delay and congestion and railway officials must often wish that their predecessors had had the foresight to provide Poole with a high-level station embodying four running roads to deal adequately with the intensive holiday traffic to and from the Bournemouth district. **E. D. HITCHINS.**

SEE DONCASTER WORKS
—*at work!*

ALTHOUGH the Ian Allan excursion to Doncaster on April 4th next has been described as a "Locospotters' Special," more adult readers who can find a grandmother to bury and so desert their desks on a weekday have here a priceless opportunity to visit a locomotive works "at work." Most visits of this nature have to be made outside business hours and thereby lose some of their attraction.

Among locomotives visiting for their "health" are sure to be several of the splendid Doncaster products of days gone by—the "A1s," "A3s" and "A4s," to name only a few; it is not often one has the opportunity to explore such giants in various stages of undress, or to learn details of their construction and equipment from men who have been close to them at every stage of their development.

The special train has been given the good timing, for these days, of 180 mins. (including stops) for the 156 miles in each direction, and it is hoped to provide the celebrated *Mallard* for motive power. Departure time is scheduled for 11 a.m. from King's Cross; then, after some 3½ hours in the works, where the party will split up into bands of twenty with a guide, the train will set out from Doncaster at 5.20 p.m. to reach King's Cross at 8.20 p.m. Buffet cars will be included in the train.

RELAYING IN SEVENOAKS TUNNEL

OWING to engineering works in Sevenoaks tunnel on January 7, 14 and 21, writes Mr. P. Seymour, the main line was closed on all three days from 11.15 p.m. on the Saturday night to 5 a.m. on the following Monday morning. Two tracklaying units were in use and Hither Green diesel shunters were employed to take over material trains at Sevenoaks (Tub's Hill) from steam locomotives. Trains between Charing Cross and the Kent Coast were diverted via New Cross Gate, Redhill and Edenbridge, but the 9.30 a.m. to Dover was the only boat train from Victoria to travel via Redhill and Edenbridge to Tonbridge. Most of the Victoria-Dover boat trains in both directions were re-routed via Swanley and Maidstone East, while the up "Night Ferry," "Golden Arrow" and the 9 a.m. Victoria-Dover boat train were diverted as well via Chatham and Canterbury East. On 14/1/51 the down "Night Ferry," recently misdirected in the up direction at Loughborough Junction, suffered a similar mishap at Swanley, when, after a detour via Maidstone East, it found itself on the route to Chatham, due to a signalling error at Swanley. It was allowed to continue, though it dislocated services in the Chatham-Gillingham "bottleneck." On 6 and 7/2/51 the up "Night Ferry" was in charge of Nine Elms' No. 35011.

LETTERS TO THE EDITOR

TRAINS ILLUSTRATED DOES NOT NECESSARILY AGREE WITH THE VIEWS OF CORRESPONDENTS

HIGH PRESSURE

To the Editor of "Trains Illustrated."

SIR,—Dr. Tuplin's two articles on "High Pressure" contain points of doubtful validity. Under modern conditions, where a locomotive designed for one class of train may have to double its tractive effort working another kind, Dr. Tuplin's 180 lb. pressure, 25 per cent. cut-off engine would have to be worked at about 60 per cent. cut-off in the latter circumstance, with disastrous effects on coal consumption. If, however, it was designed with cylinders large enough to work the second type of train at about 25 per cent. cut-off, on its normal work it would have to use either an abnormally short cut-off or to reduce its steam chest pressure to about 90 lb.; on very lightweight work it would have to do both, with serious effects on its efficiency. But a typical modern British locomotive, working normally at 220 lb. pressure and 20 per cent. cut-off, could operate quite efficiently at 220 lb. and 45 per cent. (for double power) or 180 lb. and 15 per cent. (for half power). This versatility is of primary importance in modern design.

Whether high or low pressure steam flows the more quickly through a valve is rather dubious, but I should have thought that the speed of flow would depend on the force pushing the steam rather than on its heat energy. In any case, the remedy of larger valves is not an unmixed blessing, since they increase the clearance volume and thus reduce efficiency. As Dr. Tuplin says, the criterion of efficiency is the temperature of the steam. But it is impossible to use the temperature advantage fully with low pressure since the steam cannot be expanded sufficiently to reach a low temperature; with high pressure and a large expansion ratio, on the other hand, the steam is relatively cool when it is exhausted. He adds that "a pound of steam at 650 deg. F. has the same energy whether its pressure is 10 lb. or 300 lb. per sq. in."; but it is more important to make sure that the heat in the steam is not being thrown away than to provide it in the first place. A low pressure engine cannot be provided with excessive superheat without wasting heat, but higher pressures permit use of increased superheat, as in the successive "A1," "A3" and "A4" Gresley Pacifics.

Then comes the astounding statement: "Theoretical proof that you can get practically the same efficiency with a boiler pressure of 150 lb. as with any higher pressure has been known for 100 years." I certainly have never seen any such proof—and "practically" is very vague. And are we to rely on trials carried out some 50 years ago, presumably without modern refinements in valve gear? Surely there are later tests, such as those of Prof. Nordmann in 1938, which do support pressures higher than 150 lb.?

Finally, there is that astonishing article on "High Pressure History," wherein it would appear that the increase in boiler pressure throughout the century is mainly due to a series of coincidences and the limitations of existing designs. Most startling is the penultimate paragraph that suggests Messrs. Bulleid and Hawksworth were incompetents playing a little game of dare with each other at their companies' expense!

Durham. G. HUNT.

To the Editor of "Trains Illustrated."

SIR,—On theory, Dr. Tuplin may know all the answers, but as regards the practical side of the locomotive I must conclude he knows very little. Suppose we were setting out one night with the wind blowing hard and the rain dripping down our necks, as I have been lately, at the head of a coal train of 1,000 tons or more and with a 40-mile run to cover, including a few banks at 1 in 100 or 200—and, note carefully, a tender full of coal that's half slate and the rest dust. We will assume that the engine is Dr. Tuplin's patent 180 lb. boiler machine.

For the first few miles, everything in the garden is lovely, the pressure gauge needle sticking on the mark. Then the combined effects of the weather, the load, the gradients and the quality of the coal begin to be felt. The needle starts to slip back to about 155-160 lb. In order to avoid losing time, the driver has to drop the lever over a bit, thereby increasing the demand on the boiler. Maybe by using the pricker and with careful firing the pressure is restored, but it is touch and go for the rest of the trip. With a 280 lb. engine in the same conditions the pressure might drop to 240 or 225, but there is all the difference in the world between 225 and 160 lb. per sq. in., for the loss would not be so bad in proportion. In short, pressure is power.

Take the case of two Southern 0-6-0 types, both with 19 in. x 26 in. cylinders and 5 ft. 1 in. driving wheels; one has a 180 lb. boiler and moderate superheating, the other 225 lb. and high superheat. While the first will take, say, 50 wagons along the level at a reasonable speed, the second can tackle 70 at a higher speed and climb hills that would make the first cough a bit.

Hounslow. A. TAPLIN.

RECOVERY MARGINS

To the Editor of "Trains Illustrated."

SIR,—In his January commentary, Mr. Cecil J. Allen stated that the Western Region allows varying margins to up expresses running into Paddington but not, apparently, elsewhere. This is not so. To quote some examples known to me—not, let it be emphasised, a complete list: the 7.40 a.m. Birkenhead-Margate is allowed 2 mins. between Banbury and Oxford; the 2.25 p.m. Shrewsbury-Paddington is given 3 mins. and the 10.20 p.m. York-Bristol 4 mins. between Aynho Junction and Oxford. Elsewhere, Plymouth Ocean Specials are allowed 4 mins. between Newbury and Reading in addition to the 4 mins. granted between Southall and Paddington. The summer Saturday 8.40 a.m. Birmingham-Portsmouth train is allowed as much as 12 mins. recovery time between Banbury and Oxford.

Woodley, near Reading. J. BOURNE.

To the Editor of "Trains Illustrated."

SIR,—Unfortunately the North Eastern Region *does* make use of Recovery Margins. In the 1950 summer Working Timetable there were no fewer than 209 such allowances shown between York and Newcastle alone. They are also in force between Selby and York, Newcastle and Berwick and on branch lines such as Darlington-Saltburn, Northallerton-West Hartlepool, Hull-Leeds, York-Sheffield, etc. To follow Mr. Allen's own example, the "Tees-Tyne Pullman" is shown as having a recovery allowance of 8 mins. between Durham and King Edward Bridge on the down journey.

Scarborough. K. HOOLE.

To the Editor of "Trains Illustrated."

SIR,—Recovery margins encourage not only slack driving, but also make adherence to exact station times quite unnecessary, thus leading to a "couldn't care less" attitude on the part of station staffs. The results can be seen daily between King's Cross and Hitchin, where suburban trains are thrown into chaos by out-of-path expresses. Some drivers of the latter spin out their time, others run early, so that up expresses run anywhere within ten minutes of their schedule. The Cambridge Buffet Expresses suffer continually in these conditions; to counteract this state of affairs, the 12.10 p.m. from Cambridge has had its running time increased without any additional stops. Since the mass introduction of recovery margins on the East Coast route many drivers seem to have lost all incentive to keep strictly to their paths; never since the war have I known punctuality so bad on this main line.

Cambridge. H. N. A. SHELTON.

WELSH NARROW GAUGE RAILWAYS

To the Editor of "Trains Illustrated."

SIR,—The Festiniog Railway certainly does not claim to be the oldest railway in the world of 1 ft. 11½ in. gauge (*January issue, page 32*)—the Penrhyn Railway was working by July, 1801, and even this is by no means a certain first-comer. It is also inaccurate to say that if the Festiniog Railway receives its death-knell, the 1ft. 11½in. gauge system of Caernarvonshire will cease to exist. The Penrhyn Railway was in a very healthy condition on Boxing Day last! Furthermore, the distance between Blaenau Festiniog and Portmadoc is only 13¼ miles; the figure quoted by you includes the old main line up to the former terminus at Dinas. The Talyllyn Railway is of the minimum gauge authorised by its Act, i.e., 2ft. 3in.

To quote strict chronological order, the Croesor Tramway should follow the Festiniog in age, being opened in the early 1860s—then came the North Wales N.G.R. The statement that the Portmadoc, Beddgelert and South Snowdon Railway built the section of line connecting South Snowdon and Portmadoc could be amplified; the original work stated by you as commencing early this century was never completed. It lay moribund and incomplete by 1914, and the course adopted in 1920 onwards was rarely the same. In consequence there are two sets of abandoned works, which may puzzle some people.

Finally, can we straighten out this matter of the cutting-down of the N.W.N.G. locomotives in 1923? There was no need to correct the statements made by Mr. F. L. Pugh in the November issue. I hope I shall be forgiven for quoting a relevant passage from my own book on the subject (page 144) . . . . "As one of the objects of the new W.H.R. was to work trains through from Dinas to Blaenau Festiniog, in the winter of 1923 each of these engines was taken into Boston Lodge Works in turn and structural alterations made to them to enable them to pass through the restricted tunnels of the F.R. section . . . ." (I take it that this was Mr. Pugh's source of information). Anyone who takes the trouble to go and measure the tunnels between Beddgelert and Portmadoc will find they are built to standard gauge limits. In any case, any alternative suggestion is countered by the irrefutable fact that Boston Lodge records show that these engines were cut down there and unless they had been able to negotiate the Glaslyn tunnels, they would have never reached the works at all!

Sale, Cheshire. JAMES I. C. BOYD.

[*We hear that the Festiniog is still in operation and that proposals have been made to open a fund to save the line. Secretary to this fund is Mr. L. A. Heath-Humphrye, 31 Ashton Hill, Corston, Bath.—ED.*]

A BLAST FROM BRADFORD

To the Editor of "Trains Illustrated."

SIR,—In your January editorial you let off a "bleat" about the running on the old Great Northern and your late arrival in Halifax. Serves you right for travelling on that line!

For some reason the policy of the Railway Executive is to make the Midland route to London so slow that no one will use it. Yet the Midland route serves a chain of important cities, each requiring reasonably quick communication with Bradford. From the Bank returns one sees that Bradford now ranks fourth after London, and is always considerably ahead of Leeds. Yet from the railway angle we are treated to as slovenly a service from the capital as can be. May I suggest that a study be made of Table 180 in the London Midland timetable and the reason for my grumble will be very apparent.

The Bradford-Bristol service is as bad if not worse and the restaurant car facilities are deplorable. The same applies to the northward. The services to Carlisle and Glasgow and Edinburgh are very poor and the Settle-Carlisle line is the most glorious line for scenery. Yet traffic is piled on to the East and West Coast routes and the inland route is starved or one has to make journeys with changes to connect.

Because the Bradford services are so bad I am convinced that the city is rewarding the railways with constantly falling receipts both in passenger and goods traffic. It is very doubtful if the rail goods traffic out of Bradford equals one third of the total goods traffic moved by road and rail combined, for the emptiest vehicles round the warehouses are the railway wagons. Most of the wool now comes in by road because it is days quicker than rail.

Shipley, Yorkshire. WILLIAM BOTTOMLEY.

TRAIN TOPICS

Train Service Cuts

Once again since the war a coal crisis has had a serious effect on British train services. The first mid-January withdrawals of trains were local only, such as the push-and-pull service of the Eastern Region between Seven Sisters and Palace Gates; some branches in various parts of the country also lost almost the whole of their trains, if not all; elsewhere the reductions, as far as possible, have been of a sequence of trains that will make it unnecessary to steam a certain number of locomotives daily. On the main line the L.M. Region has taken off a number of important expresses. These include the 10.30 a.m. non-stop from Euston to Liverpool and the 11.10 a.m. from Liverpool to Euston; the 12.15 p.m. from Euston to Manchester and the 12.5 p.m. from Manchester to Euston; the new 8.5 a.m. from Euston to Wolverhampton and the return "Midlandler" at 10.55 a.m.; the 10.50 a.m. from Euston to Blackpool, and the 2 p.m. from Manchester to Glasgow, with the 1.45 p.m. from Glasgow to Manchester and Liverpool. The 6.55 p.m. from Euston to Birmingham and the 4.40 p.m. from Birmingham to Euston are running on Fridays only; the 10.15 a.m. from St. Pancras to Manchester and the 8.55 a.m. return trains are cancelled on Tuesdays, Wednesdays and Thursdays. The 8.30 down Liverpool and the 8.37 a.m. down Manchester are running as one train from Euston, also the 7.20 and 7.30 p.m. Highland expresses. The outstanding Eastern Region cancellation is that of the "Queen of Scots Pullman" in both directions between King's Cross and Glasgow. The Western and Southern Regions have been equally drastic, but we have not full particulars of their train service reductions or of the third batch of cuts at the time of going to press.

The World's Fastest Trains

An error crept into "Quicksilver's" article in the January issue on "The Fastest Trains in the World," and we are grateful to Mr. Hugh P. McDiarmid for calling our attention to it. On page 17, the middle photograph, of the Chicago & North Western-Union Pacific diesel streamliner that connects Chicago nightly with Denver, capital of Colorado, was, of course, the "City of Denver," and not the "Denver Zephyr" of the competing Burlington route. As compared with the joint working of the former two companies, the Chicago, Burlington & Quincy has its own metals throughout between Chicago and Denver. The same error appears in the text at the foot of page 16. It is the "City of Denver" which for years was scheduled to run the 559.7 miles from Denver down to Omaha in 7 hours 35 minutes, at an overall average of 73.8 m.p.h., seven intermediate stops included (now slowed to 8 hours 5 minutes because of the recent signalling restrictions of the Interstate Commerce Commission) though the Burlington has been very little behind, taking only 5 minutes more for its 538-mile course from Denver to Omaha. Incidentally, Lord Garnock recently showed us the details of a run that he was fortunate enough to make on the "City of Denver" one night when there had been a signal delay between Denver

and the first stop at La Salle. From La Salle the 3,600 b.h.p. twin-unit diesel whirled the 11-coach train of 559 tons on to Omaha in a running time 21¼ minutes less than that scheduled, making *seven* consecutive runs at start-to-stop speeds of 80.1, 86.7, 85.5, 80.1, 81.5, 84.5 and 82.7 m.p.h.! Including six stops totalling 17 minutes, the train ran the 477 miles from La Salle to Fremont in 6 hours 3 minutes, at an overall speed of 78.9 m.p.h. Incidentally, the first 193 miles from Denver, as far as Julesburg, are single track!

Football Excursions.

Some of the most interesting items of news these days arise from the routes and motive power featuring in special excursions, especially for sporting events. Mr. C. E. Rome sends us an account of an excursion run on 13/1/51 from Romford to Hall Green, Birmingham, for an F.A. Amateur Cuptie. A train of 11 open cars and a buffet car, headed by a "B1," left Gidea Park at 8.37 a.m. and diverted via the Stratford curve and Homerton to join the L.M.R. Broad Street-Willesden line; this road was followed to Acton, W.R., reached at 10.30 a.m. after a somewhat laborious journey. But the "Castle" which took over here, after a slow start over the Greenford loop from West Ealing Junction, made amends by hustling the load of fans up to 80 m.p.h. before a signal check at Banbury. At Hatton, the train left the main line and branched off to Bearley; from there the route followed was to Wootton Wawen, Danzey and Hall Green, reached 20 mins. later at 1.20 p.m. The return journey was marred by another stand at Banbury, this time for 23 mins. The Portsmouth-Luton F.A. Cuptie of 6/1/51, writes Mr. E. G. Dott, brought "N15" 4-6-0s Nos. 30779/87 as far as Dudding Hill Junction (the route followed was via Petersfield) where Class "5MT" 4-6-0s took over the two trains for the run to Luton.

Finally, Mr. D. A. Abbot sends us details of the Tonbridge-Chelmsford excursion mentioned in January. Class "L1" 4-4-0 No. 31754 took the train as far as Hither Green, where E.R. Class "J69" and "J68" 0-6-0 tanks Nos. 68548 and 68644 took over for the run through the Thames Tunnel to Liverpool Street; at this terminus "L1" 2-6-4T No. 67738 came on for the final stage to Chelmsford. A mishap forced the passengers to take bus to Ingatestone on the return journey, where they joined a local to Shenfield; at the latter point their special awaited them behind "B12" No. 61566, and thereafter the same motive power was used as on the down journey.

Locomotive Testing in Britain

Already the first fruits are being gathered of the elaborate and costly locomotive testing equipment now in the possession of British Railways. This comprises the Rugby locomotive testing-station, by general consent the most complete and the best-equipped in the world: the smaller testing-plant of G.W.R. origin at Swindon Works, which is still far from having outlived its usefulness; and the mobile testing plants. Some of the results already achieved were revealed recently in a paper presented to the Institution of Locomotive Engineers by Mr. D. R. Carling, the Superintending Engineer at Rugby. By tests of standard Class "5" 4-6-0s, both at Rugby and with the mobile plant between Derby, Leicester, Rugby and Willesden, curves have been plotted showing the speeds at which, in varying track conditions, the maximum output of steam can be obtained from the boiler and the maximum efficiency secured. These curves show that train deceleration does not necessarily save coal. It is calculated that had the Class "5" used between St. Pancras and Manchester in the 1948 locomotive exchanges made the run in 22 minutes *less* time, the engine, working in optimum conditions, would have burned 576 lb.—over ½-ton —*less* coal than was actually the case! It is to be hoped that this remarkable fact will be studied closely by those responsible for British timetable compilation; no doubt the conclusion applies equally to other modern designs. Again, light Mogul No. 46413 was tried with dynamometer car over some severely-graded lines of the Western Region, which also took the opportunity of testing the engine on the Swindon plant against a Western Region 0-6-0. These tests were made on Welsh coal, which certainly favoured the W.R. engine, but the latter's efficiency proved so superior that reasons had to be sought for the difference. After experiment, Swindon Works designed certain simple front-end modifications to the 2-6-0, which not only increased the Mogul's efficiency under test, but also permitted an increase in cylinder diameter, so adding to its tractive effort. Testing at Rugby until now has shown that double blast-pipes and double chimneys have not the advantage with the smaller engines that was expected, and their fitting on certain locomotive classes is therefore being discontinued; this fact may also explain the absence of a double chimney from the new 6 ft. 2 in. Pacific, No. 70000. It is clear that those in charge of locomotive design in Great Britain to-day are very wide awake, and their open-mindedness is an encouraging augury for the future.

Marylebone to Crewe

An interesting recent inter-regional development is the running of a parcels train daily from Marylebone to Crewe, to relieve the nightly pressure on Euston. The train starts at 3 a.m., uses the Aylesbury line to Grendon Underwood Junction and Calvert, where it takes the useful wartime spur line on to the L.M.R. Oxford branch, which brings it on to the L.M.R. main line at Bletchley. A similar working will probably be established in the reverse direction. We have no information as to the locomotive power used, and as to whether or not there is a change of engine at Bletchley.

Motive Power Miscellany

LONDON MIDLAND REGION

An unusual visitor to Worcester (Foregate Street) on 5/1/51 was "Rebuilt Scot" No. 46115 (9A), diverted through that station on one of the through Manchester-Pontypool Road workings as a result of a breakdown on the Shrewsbury-Hereford route. Our correspondent, Mr. B. J. Penney, noted also "Castle" 4-6-0s Nos. 7000/17/35 making the diversion with Liverpool-Plymouth and Manchester-Cardiff trains.

An occasional "5MT" 4-6-0 or Stanier 2-8-0 penetrates to Acton, W.R., with freight trains from the L.M.R., but the sight of "4MT" 2-6-0 No. 43020 of Nuneaton coming down the spur with a goods from the Broad Street-Richmond line on 25/1/51 was a novelty; on the morning of 27/1/51 No. 43001 of Bletchley was also seen here. Till now this type has been seen rarely in any part of the London area.

"Patriot" 4-6-0s are not often seen at Leicester, but on 6/1/51 Nos. 45519/37 appeared (the latter piloted by 2-6-0 No. 42932 of Nuneaton), each heading a 15-coach football excursion from Preston. The trains had travelled down the West Coast main line to Nuneaton before diverting to Leicester, write Messrs. D. A. Harlow, T. H. Knott and D. Smith. Further south, Mr. P. Roulston notes that ex-G.E. engines are operating over the other westward cross-country branch from Cambridge, for "J15" 0-6-0s are now regular visitors to Kettering. Engineering work at Wolverton on 29/12/50 forced the diversion of five up expresses from the Western Division to the Midland, writes Mr. A. B. Turner, among them the up "Irish Mail," which our correspondent noted passing Harpenden behind rebuilt "Scot" No. 46132 at 8.25 a.m.

The power reclassification of ex-L.M.S. express locomotives reported last month took effect from 1/1/51, and to judge from our correspondence, the new codes are being applied rapidly to individual locomotives. Mr. J. H. Holling notes that re-boilered "Jubilee" No. 45736 has been fitted with smoke deflectors, and Mr. J. Morris that the Pacific turned out from Crewe in black livery is No. 46245, not 46220. Mr. Mayor writes that on 22/12/50 the 11.36 a.m. from Preston to Ormskirk, Maghull, Aintree and Liverpool Exchange was oddly in charge of rebuilt "Patriot" No. 45545, a rare type on this line. The latest "Royal Scot" to be re-boilered is No. 46142.

At Derby on 21/1/51 Mr. P. Roulston found an interesting visitor for repairs to be the ex-North London crane tank No. 58865; the *Railway Observer* speculates that it may not reappear for further service. Also in the works were two of the Stanier 0-4-4 tanks, Nos. 41901/5, dock tank No. 47165 and seven "J39" 0-6-0s, Nos. 64728/51/88/97 and 64905/11. The diesel mechanical No. 10100 was standing, complete and ready for testing, outside the diesel shop. In the erecting shop were the frames for No. 73000, first of the new standard Class "5MT" 4-6-0s.

Mr. M. Shackleton reports the appearance at Manchester Victoria of Scottish "5MT" and "5XP" 4-6-0s, working through on expresses from Glasgow. On 27/12/50 Nos. 44786 (65B) and 45462 (66B) were noted, together with several engines, mainly "5XP," from 66A and 68A, while three Scottish "5XPs" spent the Christmas weekend on Newton Heath shed. Most interesting Scottish visitor of all was 2-6-0 No. 42927 of Ayr, which paid a visit last summer. Over at London Road, rebuilt "Scot" No. 46121 of 66A made several appearances in January.

Mr. D. Pendlebury reports that "5XP" 4-6-0 No. 45700 *Britannia* has been deprived of its nameplates, since this is the name bestowed on the new standard Pacific No. 70000. On 25/1/51 Mr. T. L. Jones saw the down "Royal Scot" passing Warrington some 30 mins. behind time with rebuilt "Patriot" No. 45525 at the head.

Class "5MT" 4-6-0 No. 45059 paid a return visit to Doncaster on 20/1/51 with a football excursion from Nottingham, writes Mr. G. Warnes. Its last appearance was on 9/9/50, with a St. Leger excursion from the same city. Mr. M. Wood informs us that Class "5XP" 4-6-0s Nos. 45671/95 worked into Newcastle on 27/1/51 with football excursions from Bolton.

EASTERN & N.E. REGIONS

Messrs. D. Cunliffe and F. W. Whyte have noted "A3s" Nos. 60071/7/94 with the normal round dome in place of banjo steam collectors. Some time ago the *Railway Observer* noted that "A2/3" No. 60513 had acquired a banjo dome, possibly by exchange of boiler with No. 60071, but we have no knowledge of the circumstances affecting the modification of Nos. 60077/94. At Doncaster on 5/1/51, Mr. G. Warren claims that 4-6-4 No. 60700, in steam after recent repairs, was painted in B.R. standard green livery! News of the reason for this surprising development would be welcome. Our correspondent has also noted a further "A1" with the more shapely chimney illustrated on No. 60158 in our January issue; this was No. 60125, just off the plant at Doncaster on 25/1/51.

Three unusual movements of locomotives are worthy of note. On 29/12/50 Mr. G. Marston observed "K1/1" 2-6-0 No. 61997 of Eastfield running through Newark coupled to "A4" No. 60018—an odd arrival in the south, for which we know of no explanation. The former was seen on a down freight at Newcastle Central on 27/1/51 by Mr. M. Wood. On 3/1/51 Mr. F. Grimes found "G5" 0-4-4T No. 67279 of Stratford at Lincoln shed—possibly on its way to or from the North Eastern Region for repairs? Finally, "J20" 0-6-0 No. 64684, reported in our last issue as visiting Hornsey on 7/12/50,. was transferred to that shed on 14/1/51.

An amusing paragraph in the *Railway Observer* reports two cases of stalling on the Wood Green flyover with empty stock trains by the "L1s" transferred to Hornsey for this job; it notes also that two 2-6-4 tanks are often used to take the empty "Aberdonian" from the terminus, while an "N2" and "L1" have been seen in tandem on another empty stock working. We understood that the use of "L1s" was to obviate such incidents as are here recounted; it might be added that the engines concerned came from Neasden, where Mr. S. E. Emerson alleges they receive inadequate attention. He claims that, although Leicester Pacifics may be receiving improved grooming, Neasden's Nos. 60050 and 60111 are "still in a deplorable condition." Leicester's No. 60103, incidentally, was noted out of steam at Loughborough on 10/1/51 by Mr. E. A. Thwaite, presumably after a failure; it was later towed home by an "O1" 2-8-0. Class "4MT" 2-6-0 No. 43090 of S. Lynn appeared at Leicester (London Rd.) on 30/1/51 with the through Birmingham-Yarmouth train, writes Mr. P. Roulston.

Mr. M. Shackleton reports that 40 "B17s" have visited Gorton for repairs since the maintenance of this class was transferred there from Darlington. Mr. P. J. Wright suggests that some of them are soon back for further attention. No. 61623 has paid no fewer than three visits. "Football" engines are once again reappearing with their splasher emblems painted in the appropriate club colours. Mr. Shackleton found No. 61630 of March shunting empty stock outside Longsight, L.M.R., shed on 28/12/50, while "J10" 0-6-0 No. 65188 was inside. Back at Gorton, King's Cross "L1" No. 67799 surprisingly was seen there on 5/1/51; it was observed running light through Guide Bridge, the same evening.

With reference to the illustration in our January issue of the down "Queen of Scots" leaving Leeds behind a York "V2," we note from the *Railway Observer* that this duty is now performed (since the introduction of the winter timetable) by the Heaton engine, normally an "A1" and especially Nos. 60116/27, which has brought the 8.50 a.m. Newcastle-Liverpool train to Leeds.

Mr. W. Dayton notes that "J39s" en route for repair at Derby usually "lodge" a day or so at Colwick, and are collected from there by a L.M. locomotive. At the end of December the Beyer-Garratt No. 69999 had not resumed work on the Worsborough bank, writes Mr. P. W. B. Semmens, but was still "stopped" in Mexborough shed.

Referring to the notes on page 34 of the January issue concerning a double-headed Sunderland-York parcels train, Mr. J. C. Wilson says the pilot does not work through to York, but is detached at Thirsk to work the first three vehicles round to Leeds via Harrogate and Ripon. The Pacific train engine then works the remainder of the load on to York.

Most readers, no doubt, will have read in the national press of the New Year's Day incident at Palace Gates, when "G5" 0-4-4T No. 67269 ran gently away with its empty train while the crew were on the platform. Fortunately an adverse gradient at Seven Sisters reduced the runaway's speed sufficiently to enable a courageous relief signalman there to jump aboard the footplate and bring the outfit to a halt.

A visit to the Eastern Region main line at Potters Bar on the morning of 20/1/51 rather depressed us. Apart from one "K3" at the head of a down freight and "A1" No. 60120 on the down "Queen of Scots," every engine seen was deplorably filthy. A woebegone "A4," No. 60030, took 28 mins. to reach us with the down "Flying Scotsman" and shut off steam as soon as he had topped the summit, despite a road that had been clear for 10 mins. or more, while the 7.20 a.m. Leeds-King's Cross, with a Peterborough "B1" in charge (a replacement, obviously) was behind the 7.50 a.m. ex-Leeds, the "West Riding"; both were well behind time. The time spent on Potters Bar platform by passengers awaiting an up stopping train delayed by these two expresses, was evidence to support the views of a correspondent on page 102.

WESTERN REGION

Latest news from Swindon works is that new "1600" Class pannier tanks Nos. 1630/1 were nearly complete and that the frames for Nos. 1632-5 were laid by mid-January, write Messrs. J. Bourne and M. Winslow. On 3/1/51 ex-S.H.T. 0-4-0T No. 1143 was outside the machine shop. Messrs. R. Earle and J. Bourne note that ex-Barry Rly. 0-6-2 tanks Nos. 246/58/62/9, officially withdrawn some time ago, are in use as works shunters at Swindon, a task often performed for a time by other condemned 0-6-0 tanks before final scrapping. Also engaged on this duty is No. 1542, last of the "1501" Class. The two last survivors of another veteran 0-6-0PT class, Mr. Bourne notes, are ending their days at the same shed—Nos. 907 and 1861 of the "1854" class at Didcot.

Mr. R. P. Walford, referring to our December note on the pairing of "Star" No. 4058 with a blue tender, writes that previously the same engine had been coupled to the flat-sided tender of "6959" Class 4-6-0 No. 6977. He adds that "Castle" No. 7013, still in experimental light green, is running with a tender in standard dark green livery, while "6959" Class No. 6991, in standard black, has a faded green tender; the correct tender of the last-mentioned is paired with "Hall" No. 5997, which was being repainted at Swindon at the time No. 6991 was completed.

Mr. D. Matthews reports the unusual appearance of 4-6-0s on the Falmouth branch on 25/11/50, when a seven-coach rugby football excursion was worked through from Penzance. "Grange" No. 6869 took the train to Truro, where "Hall" No. 4965 was coupled on to the rear end—normally nothing larger than a "4500" Class 2-6-2 tank operates over the single line branch thence to Falmouth. For the return journey a coach was added and the train left Falmouth double-headed by 4965 and 2-6-2T No. 5537, running tender and bunker first, since Falmouth does not boast a turntable.

Mr. J. Bourne notes that in our November issue a correspondent, discussing the appearance of E.R. locomotives at Oxford, omitted to mention that one appears there between 2.32 and 2.40 a.m. daily, working through on the 6.25 p.m. Grimsby-Swindon fish train; it returns light to Leicester from Swindon at 4.35 a.m., stopping at Oxford between 5.29 and 5.33 a.m.

In company with that at Salisbury, the W.R. shed at Basingstoke was closed on 26/11/50; since then it has been used to store three "N15X" 4-6-0s, notes the *Railway Observer*.

Gas Turbine No. 18000 reappeared in service on 29/1/51, writes Mr. J. P. Andrews, but from 30/1/51 was relegated to milk train workings due to insufficiency of train heating arrangements. The trains concerned are the 12.10 p.m. W. Ealing-Swindon and 3.15 p.m. return working. The top link crews trained to work No. 18000 are still in charge.

SOUTHERN REGION

Commenting on a note in our January issue, Mr. J. N. Faulkner writes that the appearance of a "Merchant Navy" at Staines is by no means unusual. In addition to freight workings, Nine Elms regularly uses the route through Weybridge, Chertsey and Staines for running in engines that have undergone light repairs; alternatively they are given charge of a pick-up freight that leaves Surbiton for Feltham at about 10.30 a.m. and which has departed behind most of the Nine Elms Pacifics at one time or another—sometimes with no more than a couple of wagons behind the tender! Brighton Pacifics, notably Nos. 34037/8, now work regularly into Victoria on the 10.18 a.m. ex-Brighton via Oxted.

At the beginning of January, writes Mr. A. Taplin, repairs were commenced on the Feltham turntable, with the result that the Hounslow-Twickenham triangle has seen a daily procession of "N15s," "H15s," "S15s," 2-8-0s, 0-6-0s and the big tank classes turning there, sometimes in a group of as many as five locomotives coupled together. The new diesel shunter, No. 11001, returned to Feltham on 14/1/51 (in mid-December it was seen undergoing shunting tests at Three Bridges) and, leaving there at 10.30 a.m., performs a daily round of shunting at Barnes, Chiswick and Brentford before returning at about 8 p.m.; two instructors from Norwood are always aboard with the crew.

Mr. P. Norris writes that on 13/1/51, a "Nelson" (No. 30862) appeared on the 8.40 a.m. Bournemouth-Waterloo in place of a Pacific for the first time in two years; four minutes were gained to Winchester, where Mr. Norris left the train. Mr. A. T. Gibbon expresses wonderment, in view of the feats of Bulleid Pacifics on the Salisbury-Exeter route, recounted by Mr. Cecil J. Allen in a recent issue, that these engines are not allowed to take more than 290 tons unassisted from Weymouth to Dorchester, a stretch of line that includes the stiff climb to Bincombe Tunnel, culminating in a gradient of 1 in 51 through the tunnel; our correspondent has been up the bank in a 300-ton train with which an unaided "Nelson" experienced no appreciable difficulty, while he understands that the limit for W.R. "Castles" is 310 tons. On 23/12/50 the Pacific driver of the 5.35 p.m. Weymouth-Waterloo, loaded to 300 tons, was adamant in his insistence on help, with the result that the train was held 15 minutes to await the pilot engine from Dorchester (South).

On 27/1/51 a Brighton-built 2-6-4T No. 42066 made a first appearance at Reading, writes Mr. S. S. Comock, on a train from Redhill. As this is a Ramsgate engine, the working was presumably the result of a failure. Recent and unusual visitors to Guildford have included Pacifics Nos. 34030/43/61 and "N15s" Nos. 30744/5/53/73/7.

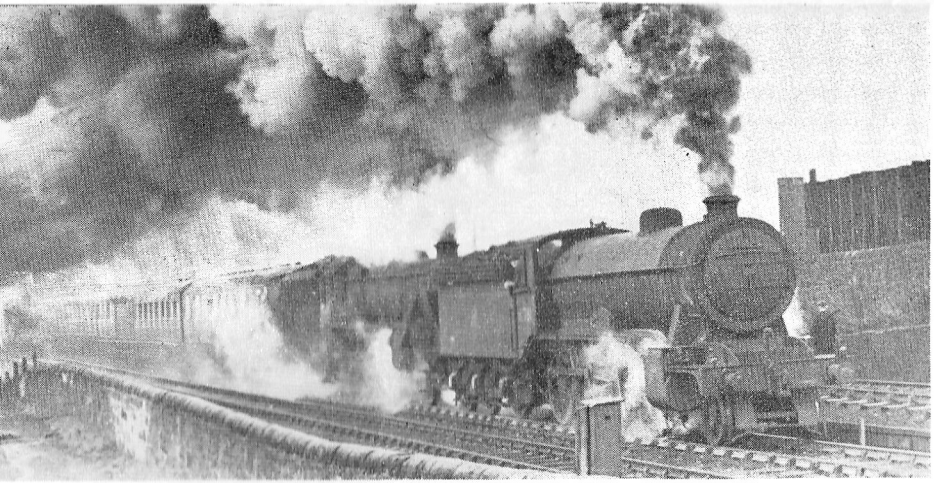
SCOTTISH REGION

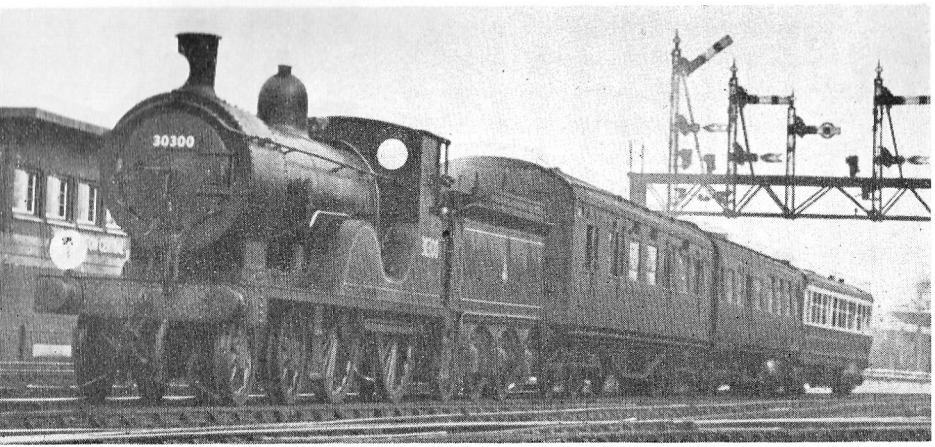
Two "A1s" were at work on the West Coast main line between Crewe and Glasgow, on the night of 17/1/51, write Messrs. J. Douglas and F. Cameron; Nos. 60152/61 were in charge of the 9.25 p.m. and 11.40 p.m. from Euston. With them at Polmadie the following morning was "Patriot" No. 45504 from Crewe, which left with the 10.55 a.m. slow to Carlisle. Mr. R. Barr adds that No. 60161 continued on the 11.40 p.m. from 20-27/1/51, returning on the 10.20 p.m. from Glasgow the next night. Nos. 60152/60/1 are now officially transferred to Polmadie, while three more Class "5MT" 4-6-0s have gone to St. Margarets.

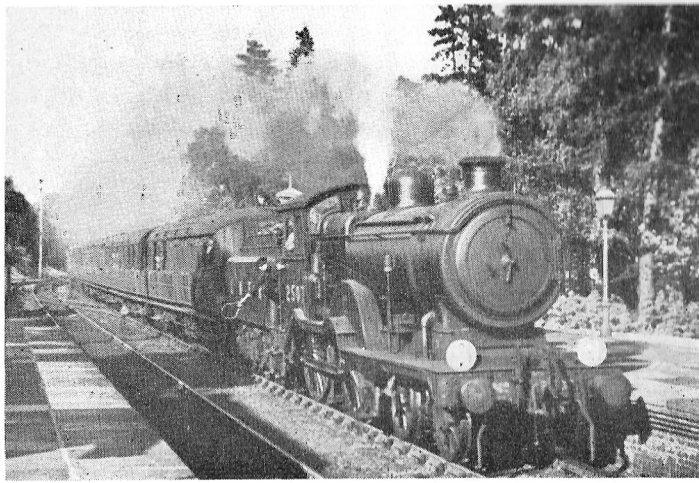
Messrs. K. Hoole and Montague Smith draw our attention to the odd fact that there has been no transference of nameplates between 2-10-0s Nos. 90773/4, but that *both* have carried the name *North British* for some years past. Have two engines of the same type ever before borne identical nameplates?

In the Scottish Region the reclassification of ex-L.M.S. locomotives has been accompanied by the raising of ex-L.N.E.R. "A4s" and "A1s" to "8P"—but not of "A3s." Mr. J. Sims noted ex-Caledonian 4-4-0 No. 54447 at Eastfield recently with a North British-type chimney that had been fitted at Cowlairs works.

Some out-of-the-way combinations of motive power have been noted recently by Mr. J. Stark—2-8-0 No. 90436 and "D11/2" 4-4-0 No. 62671 on a midday Glasgow (Queen Street)-Fife train; "J37" 0-6-0 No. 64570 and "A2" No. 60535 on the up "North Briton" out of Glasgow; "V2" No. 60882 and a "5MT" 4-6-0 on a Glasgow (Buchanan Street)-Perth train; and "B1" No. 61355, tender first, heading "A4" No. 60009 into Edinburgh with the down "Flying Scotsman"—obviously the result of a Pacific failure. Unfortunately he does not specify dates. He adds that "A2/3" No. 60524 *Herringbone*, appropriately enough, has been regularly employed on the 12.30 p.m. fish train from Aberdeen to the south! Mr. Stark concludes with an eulogy of the high standard of locomotive cleanliness, applied even to "J83" station pilots, that is set by Haymarket shed.







PHOTOMISCELLANY—*Above left* : Class "K2" 2-6-0 No. 61781 *Loch Morar* pilots Class "5MT" 4-6-0 No. 45130 up Cowlairs bank with a Glasgow—Fort William express. *Above right* : Ashford-built diesel-electric No. 10201 on the Midland, photographed at Knighton Junction North Box, Leicester, with the 12.5 p.m. express from Derby (13/1/51). No. 10201 returned to the S.R. on 17/1/51 and now stands on the old turntable site between Waterloo (Eastern) and Charing Cross. *Below left* : Class "T9" 4-4-0 No. 30300 leaving Southampton Central with a Chief Regional Officer's Special on 9/12/50 ; the last vehicle is the 12-wheeled observation saloon No. DS291. *Below right* : No. 2507, the only Class "D15" 4-4-0 with cut-away frames (as the result of an accident near Broxbourne), passing Wolferton with the 5.30 p.m. Hunstanton—Liverpool express on Whit-Sunday, 1949.

[J. Robertson, A. F. Taylor, J. B. Heyman, P. J. Lynch

BRITISH RAILWAYS LOCOMOTIVE STOCK CHANGES

IN all cases, B.R. numbers of locomotives are given. NYA denotes " not yet allocated." The lists are correct to the following dates: E., N.E. and Sc.R. to 20/1/51; L.M.R. and W.R. to 31/12/50.

NEW LOCOMOTIVES

"5700" 0-6-0PT; 6777/8/9-NYA; **"9400" 0-6-0-PT:** 8424, 9433-NYA; **" 7800 " 4-6-0:** 7822 *Foxcote Manor* -89A; 7823 *Hook Norton Manor*, 7824 *Iford Manor*, 7825 *Lechlade Manor*, 7826 *Longworth Manor*, 7827 *Lydham Manor*, 7828 *Odney Manor*, 7829 *Ramsbury Manor*-NYA; **0-6-0 Diesel:** 12084/5/6/7-12B; **" 2MT " 2-6-2T:** 41289-5A; **" 4MT " 2-6-4T:** 42061/2/3/4/5-5D; **" 5MT " 4-6-0:** 44695-25F; 44696/7-26A; **" 4MT " 2-6-0:** 43069-35A; 43096-50C; **" B1 " 4-6-0:** 61373-40B; **" 7MT " 4-6-2;** 70000 *Britannia*-30A.

ENGINES CONDEMNED

1855/62, 2153, 2386, 2908/39, 4528, 9083, 40488, 43319, 43827, 46658, 48933, 49074/90, 49364, 49641/9/51, 54630, 58912, 62243, 62357, 62417, 63205/21, 63328, 65604, 67165, 69418.

ENGINES RECLASSIFIED

Ex-L.M.S. locomotives: 5XP to 6P, 6P to 7P, 7P to 8P; ex-L.N.E.R. locomotives: Classes " A1 " and " A4 " to 8P.

SHED ALLOCATION CHANGES

Railcars: 10-87E; 16-81F. **Locomotives:** 1027-87H; 1458-84F; 1502-81E; 1629-88A; 1925-81D; 1996-87A; 2339-85A; 2800-87B; 2806-86C; 2858-81F; 2869-84K; 2892-86C; 3703-86G; 4034-82D; 4060/75-82A; 4081-87E; 4092-84A; 4093-85A; 4130-86A; 4337-84F; 4536-82C; 4618-88A; 4662-86F; 4690-88D; 4912/32/47-82B; 4918/60/80-84C; 4919/77-84B; 4933-82D; 4956-81C; 4963/8-86C; 5026-81F; 5027-84K; 5034-81D; 5045-84A; 5064-82A; 5077-86C; 5086-85A; 5150-83A; 5169-86E; 5223-87F; 5603-88D; 5911-86C; 5918-81C; 5943/71-85A; 5944-84B; 5975-82D; 5994-81A; 6102/7-82A; 6354/91-84F; 6774 5-88C; 6776-87A; 6804-82B; 6837-86C; 6840/9-86G; 6845-82B; 6872-86E; 6901-84C; 6924-84D; 6942-84B; 6956-84A; 6985-85B; 6990-81F; 7021-87E; 7037-82C; 7204-87A; 7309-81C; 7800-84C; 7810-84G; 7820/1-89A; 7929-84E; 8465, 9431-87B; 9432-84E; 9787-87F, 12024/5/6/7/8-8C; 15100-87C; 40047-3C; 40091/8, 40155/72-14B; 40362-23C; 40527/31-4B; 40592-67B; 40908-67A; 41116-8E; 41173-7A; 41285/6/7-10E; 42174-17A; 42201-67C; 42204-64D; 42378-4A; 42411-25D; 42553-25C; 42726/7/8-27B; 42791-14B; 42865-25D; 42892-8C; 43004-12D; 43538-35C; 43767-18A; 43801-14C; 43851/2-20D; 43909-14B; 43985-21A; 44033-14A; 44042/62-25D; 44105, 44220-24D; 44308-8E; 44335-20B; 44421-8E; 44448-4B; 44462/74/85-25D; 44481, 44541-27E; 44524-21D; 44562-20B; 44712-2A; 44717-5A; 44888-21A; 45036, 45117, 45484-64A; 45092-1A; 45128-5B; 45210-25F; 45211-25G; 45222-25B; 45238-19A; 45374-1A; 45589-20A; 45702-26A; 46130-5A; 46436/7-25C; 46727-8B; 47276, 47301-21C; 48036-1A; 48110-84G; 48131/3-15A; 48126/49-20B; 48258-5B; 48277-16D; 48325-1A; 48376-15A; 48364, 48401-14A; 48468-84G; 48518-1A; 48524-87K; 48686-2A; 48706/30/2/5/9-87K; 48719/26-6C; 48725/66-26A; 48760-84G; 48751/4/6-5B; 49105-4B; 49153-8C; 49408-10A; 49570-26A; 49510, 49640/72-27B; 49660-25D; 50656-26E; 50829-26C; 51218-5B; 51423-28B; 52037/56-25A; 52191, 52331, 52448-25C; 55121/82-66C; 55134-66B; 55188-CWE, Law Jcn.; 56029-B. & W., Renfrew; 56039-65G; 56287-66C; 57695/8-67B; 58183-3B; 58192-19A; 58200-14B; 58310-14A; 58376-12A; 58426/9-5B; 58427-9B; 58889-86K; 58921-7D; 60047-34A; 60108-36A; 60152/60/1-66A; 60532-61B; 60537-64B; 60836/94, 60980-64B; 60972-62B; 61065-50B; 61132-62B; 61338-50B; 61545-32D; 61733/5/70-65A; 61736/9-40F; 61740-40B; 62048/9/50-51A; 62056/7-51G; 62345-50C; 62717-53B; 62743-64B; 63270-50F; 63340-51D; 63359-51C; 63405-51D; 63427-54D; 63620, 63843-53A; 63948-35B; 64313/94-38E; 64375, 64438-34E; 64645/6/53/8/73-31A; 64684-34B; 64767/73-30A; 64771-32A; 64817-51D; 64870/97, 64931-54C; 64935-50B; 64940-51D; 65131-10F; 65252-62A; 65580/8-31A; 65647-53A; 65690-50G; 65654, 65705-54A; 65720-51J; 65788-51A; 67376-35A; 68017/9-54D; 68063-6F; 68071-8E; 68171-40B; 68176-39A; 68562-68B; 68671-6E; 68702-52C; 68786-35A; 69391-52B; 69703-30A; 69902-36B; 90001/72-53A; 90002/36-38D; 90022-51A; 90025-38B; 90101/5/13/23-26A; 90205/97; 90324-26C; 90343-26B; 90327/66, 90413-26A; 90411/92-38B; 90450-51A; 90535/48/61/8/89-26A; 90685-84K; 90712-26C; 90715-26A.

READING FOR RAILFANS

THE GLASGOW & SOUTH WESTERN RAILWAY, 1850-1923. *The Stephenson Locomotive Society. 7s. 6d.*

The Glasgow and South Western Railway was a clannish sort of entity which hugged its own wee corner of the Lowlands, and after each rollicking " nicht oot," gave David L. Smith something rich to write about in future *Trains Annuals* and elsewhere. This is as cooling a draught of the facts as will fill 60 packed and illustrated pages. Not even a Sassenach could question the value of this record, and if it seems parsimonious to omit the running numbers of each engine class, that is the fault of Scottish thrift, which only built a new engine when an old one collapsed, leaving a useful hole in the list. Like most railways who home-made their engines, the G.S.W. produced pearls and paste together, and it might have been healthier for British locomotion to farm out the job to specialists, as most other countries do. But then, history and its publishers would have been that much impoverished, and for the wealth so neatly frozen in this work, I award a first, with a rider that the excellent colour plate by V. Welch surely deserved the courtesy and appreciation of a credit title.

ABC OF BRITISH RAILWAY LOCOMOTIVES, Pts. 1, 3, 4. *Ian Allan. Each part 2s., or combined in a bound volume. 8s. 6d.*

Amid the flurry of soaring prices, it is gratifying to discover that the latest edition of the railwayac's *vademecum*, the Ian Allan locomotive ABCs, remains stable at two shillings per part —the more so because this new series incorporates added value in the shape of shed allocations for each locomotive. Illustrations, as always, are useful and well-produced and the new edition can be thoroughly endorsed as a worthy successor to previous series.

NAMES FOR NEW B.R. STANDARD LOCOMOTIVES

British Railways have announced the following names for the new Class " 7MT " and " 6MT " Pacifics. Nos. 70015-24, earmarked for the W.R., are named after early G.W.R. locomotives.

70000	*Britannia*	70005	*John Milton*
70001	*Lord Hurcomb*	70006	*Robert Burns*
70002	*Geoffrey Chaucer*	70007	*Cœur-de-Lion*
70003	*John Bunyan*	70008	*Black Prince*
70004	*William Shakespeare*	70009	*Alfred the Great*
		70010	*Owen Glendower*
70011	*Hotspur*	70018	*Flying Dutchman*
70012	*John O'Gaunt*	70019	*Lightning*
70013	*Oliver Cromwell*	70020	*Mercury*
70014	*Iron Duke*	70021	*Morning Star*
70015	*Apollo*	70022	*Tornado*
70016	*Ariel*	70023	*Venus*
70017	*Arrow*	70024	*Vulcan*

CLASS " 6MT " 4-6-2

72000	*Clan Buchanan*	72005	*Clan Macgregor*
72001	*Clan Cameron*	72006	*Clan Mackenzie*
72002	*Clan Campbell*	72007	*Clan Mackintosh*
72003	*Clan Fraser*	72008	*Clan Macleod*
72004	*Clan Macdonald*	72009	*Clan Stewart*

SPOTTINGS & JOTTINGS

LONDON—DONCASTER, 1951

THIS Easter's Holiday Special is an event indeed! Doncaster Works will be at home to the Locospotters, and *Mallard*, pride of the L.N.E.R., will be whisking our special train from London to Doncaster on Wednesday, April 4th. The leaflet which you will find in this T.I. gives you all the preliminary details, so it's up to all South of England members to start saving and send in their forms straight away.

Unfortunately, there won't be room at Doncaster for people from all centres, and the Eastern Region can only arrange one such visit a year. But it will be possible to include a limited party from Nottingham, Leicester, Peterborough and other East Midland towns, joining the main party at Grantham. Full details of the arrangements from this centre will also be found in the leaflet herein. For members in other parts of the country we hope to have the London Rally for provincial visitors after Whitsun on May 19th, as mentioned in last month's issue, and some centres may have their own parties or rallies before then, so make sure you're on your Area Secretary's list for information about local activities of this sort.

NEW AREA SECRETARIES: West Lancs.: Mr. G. T. Lang, 94 Haig Avenue, Southport. S.W. Scotland: Mr. J. Smith, 194 Winton Road, Irvine, Ayrshire. East Scotland: Mr. F. Skea, 27 Downie Park, Dundee.

It's good to know that things are moving at last in Scotland! There and in most other places, however, the Club still urgently needs the help of adult organizers, so please excuse me if I send out a call—

TO ADULT RAIL FANS . . .

Hundreds of young Locospotters in your part of the country are waiting for someone to organize local activities for them. Please help them and the few hard-working people already doing their best by becoming a Club Area or Group Secretary, an absorbing spare-time activity for all true enthusiasts. Just drop a line to me:

The General Secretary,
Ian Allan Locospotters Club,
282 Vauxhall Bridge Road,
London, S.W.1.

Help is especially wanted in:

EAST LONDON & ESSEX.
BEDS., BUCKS., & BERKS.
WARWICKSHIRE.
WORCESTER & SALOP.
LIVERPOOL.
MID-LANCS.
DURHAM & NORTHUMBERLAND.
GLASGOW & EDINBURGH.
and in Cornwall, Dorset, Cumberland, North Wales and many other districts.

SMALL ADVERTISEMENTS

Announcements can be accepted up to the 1st of the month for the following month's issue. The charges are 2d. per word private (minimum charge 2/-) and 4d. per word trade (minimum charge 4/-.) Cash with order. No box Advertisements can be accepted.

RAIL SPEED POCKET CHART. ¼ mile times as m.p.h. — 25/100. 9d. post free. Lewis Cozens, 25 Cholmeley Crescent, London, N.6.

THE LOCOMOTIVE CLUB OF GREAT BRITAIN. Members wanted. Age over thirteen. Write to Assistant Secretary, 40 Stocklake, Aylesbury, for prospectus, etc.

RAILWAY POSTCARDS. Unique subjects. Mainly Scottish. State requirements. Cunningham, 11 Forres Street, Edinburgh.

BACK NUMBERS of Trains Illustrated (Nos. 3 to date) 1/- each. Buses Illustrated (Nos. 1 to 7) 1/6 each. Meccano Magazines, large 9d. each, small (1942-1949) 6d. each, 1950 issues 9d. each. Bus, Tram and Railway PCs 6d. each. Lens of Sutton, 50 Carshalton Road, Sutton, Surrey. Call or write.

SPOTTER OF THE MONTH COMPETITION

First in the post for January's competition was the new Herts. Area Secretary Brian Redgers, of Potters Bar (and no cheating, either!) I must apologise to Southern Region spotters for picking a number beyond their reach in January.

MARCH ENTRY COUPON

SPOT FOUR LOCOS whose number digits add up to 12 (e.g. 62013) during the fortnight March 15th to 28th. Club members only. This coupon must be used and completed. Prize of six free "T.I." issues to first correct entry received; result in May issue.

NAME_____ Membership No.____

ADDRESS _____

I claim the title of "Spotter of the Month" for March. I saw the following locos (digits totalling 12), between March 15th and 28th:

Number	*Shed*	*Point Seen*	*Time*	*Date*

THIS COUPON MUST BE SENT TO CLUB H.Q. BY MARCH 30th, 1951.

A NEW BOOK

by

O. S. NOCK

B.Sc., A.M.I.C.E., M.I.Mech.E.

BRITISH LOCOMOTIVES FROM THE FOOTPLATE

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